CCC SCIENCE and MECHANICS 609

# 27 Projects You Can Build

# RADIO-TV EXPERIMENTER

75c Fall '62

Free-Standing Electronic Wall

BIGGEST EVER

WHITE'S RADIO LOG

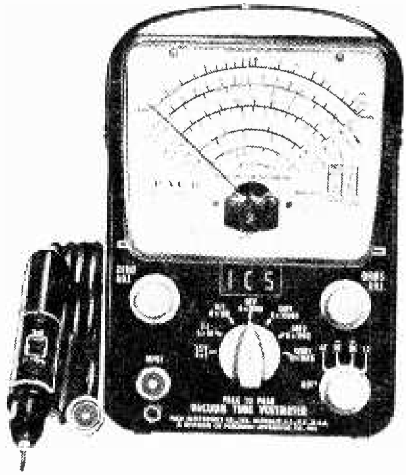
OVER 14,000 LISTINGS
AM-FM-TV STATIONS
WORLD-WIDE SHORT WAVE

Radio-Phono to Hi-Fi • Switch Tuning

Shop Test Setups • 2-Meter Transceiver

Better Crystal Control • CB Wattmeter

# Let I. C. S. equip you for success in radio-TV-electronics—with professional equipment!




**Brand-new "Electronic Laboratory," now being offered for the first time, can help you land in this big money-making field—FAST!**

Here's an opportunity for you to turn spare time into cold cash, or begin a whole new career—in a field where the rewards have never been greater. And you *don't* need previous experience to do it!

International Correspondence Schools has just developed a new I. C. S. Electronic Laboratory you can construct in your own home. Includes series of training kits, plus the new I. C. S. VTVM—the professional quality vacuum tube voltmeter shown here. With it comes complete course instruction combining all the fundamentals with practical knowledge you can apply at once. And best of all, you build your own professional test instrument!

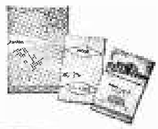
## I. C. S. instruction gets you going with equipment you can really use!

A famous manufacturer of nationally known electronic testing equipment worked closely with I. C. S. to develop the Electronic Laboratory and the VTVM itself. Everything you get is geared to increase your skill and knowledge step by step. Until finally, you've completed a precision testing unit you can use for practically any kind of experimentation, design or servicing work.

Here's how I. C. S. instruction works. You begin with basic study lessons. Texts are clearly worded and easy to follow. At the same time, you "act out" what you learn with simple experiments. Then, in 3 easy stages, you assemble your own precision testing unit. Throughout, your instructor gives you expert, professional help. You learn at home, in spare time, as fast as ability permits.

## Coupon brings full details on your future in this fast-growing field!

Make up your mind right now to find out how I. C. S. training in Radio-TV-Electronics can pay off for *you*. See how it can help you cash in on the tremendous demand for men skilled in installation, maintenance and servicing of radios, TV sets, hi-fis, computers, automation systems and a host of other space-age devices. Clip and mail the coupon below. You'll receive 3 valuable *free* booklets—including sample lesson. They'll show how you can land in this big money-making field *fast!*



**Coupon brings 3 valuable FREE booklets. Mail it today!**

## INTERNATIONAL CORRESPONDENCE SCHOOLS

ICS

**BOX K9448J, SCRANTON 15, PENNA.** In Hawaii reply P. O. Box 000, Honolulu. In Canada, I.C.S. Canadian, Ltd., Montreal

Please rush me "How to Succeed," sample study lesson and opportunity booklet in the field I've checked below.

**RADIO-TV-ELECTRONICS**
- ☐ Electronic Fundamentals
- ☐ Electronic Technician
- ☐ F.C.C. License
- ☐ General Electronics
- ☐ Industrial Electronics
- ☐ Instrumentation, Servos, Automation Electronics
- ☐ Radio-TV Servicing

**ELECTRICAL**
- ☐ Electrical Drafting
- ☐ Electrical Engrg.
- ☐ Elec. Engrg. Technician
- ☐ Electric Light & Power
- ☐ Practical Electrician
- ☐ Professional Elec. Engr.

**OTHER FIELDS**
- ☐ Architecture-Building
- ☐ Art
- ☐ Automotive
- ☐ Business
- ☐ Engineering
- ☐ High School

IF NOT LISTED, PLEASE SPECIFY ______

Name ______ Age ______ Home Address ______

City ______ Zone ______ State ______ Working hours ______ A.M. to ______ P.M.

Employed by ______ Occupation ______

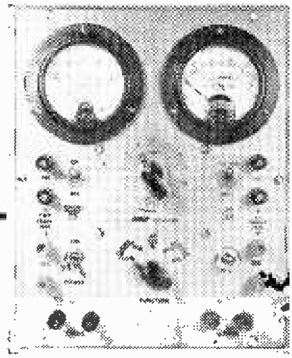
**Special low rates to members of U. S. Armed Forces**

No. 609

# RADIO-TV EXPERIMENTER

Fall 1962 Edition

A SCIENCE and MECHANICS Handbook



## COVER STORIES



## FEATURE STORIES



## WHITE'S RADIO LOG (New Listing Includes Over 1,300 Changes)



## TEST EQUIPMENT AND THE SHOP



## OF SPECIAL INTEREST TO HAMS



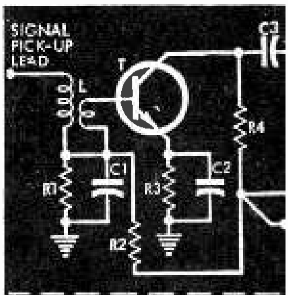
## PROJECTS FOR THE EXPERIMENTER

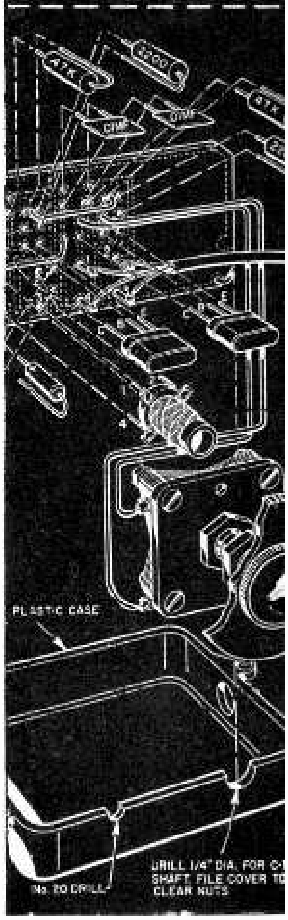


## DEPARTMENTS AND PUZZLES



Cover by Bill Wadkins





**B. G. DAVIS**
Publisher

**JOEL DAVIS**
Assistant Publisher

Published and Copyrighted 1962 by
**SCIENCE AND MECHANICS PUBLISHING COMPANY**
A Subsidiary of Davis Publications, Inc.

**Editorial Office: 450 E. Ohio St., Chicago 11, Ill.**
**Business Office, Subscriptions: 505 Park Ave., New York 22, N. Y.**

**ART YOUNGQUIST**
Editorial Director
**GARRY WINTER**
Editor
**HENRY C. HOLCOMB**
Managing Editor
**LYNELL A. JOHNSON**
Assistant Editor
**DON A. TORGERSEN**
Assistant Editor
**LEROY R. KIETZMAN**
Production Editor
**BILL WADKINS**
Art Director
**BILL McHUGH**
Electronics Editor, S&M


RADIO-TV EXPERIMENTER No. 609 presents a selection of the most popular electronics articles that have appeared in SCIENCE and MECHANICS magazine, plus many new projects covering AM-FM radio, television, and dollar-saving test equipment of interest to all experimenters, amateurs, and DX fans. A newly revised White's Radio Log is also included.


**Advertising Offices:** Chicago: 450 E. Ohio St., WH 4-0330; New York: 505 Park Ave., PL 2-6565; Los Angeles: 6363 Wilshire Blvd., phone 653-5037.

**men 17-55**

## JOB OPPORTUNITIES! EXCITEMENT! MONEY!

All this can be Yours as a trained

# Electronics TECHNICIAN

## OVER 6,000 FIRMS HAVE EMPLOYED DeVRY TECH GRADUATES!

Thousands of companies in the United States and Canada who have employed DeVry Tech men prove two most important facts: (1) Electronics is one of the biggest, fastest growing opportunity fields of our time; and (2) DeVry Tech graduates are "WANTED" MEN.

Whether DeVry Tech prepares you in spare time at home or in its modern Chicago or Toronto Laboratories, your training is designed to get you ready to meet the exacting standards of industry. You get practical training that not only helps to fit you for a job or a service shop of your own—but also gives you a foundation for a career that can be profitable the rest of your life.

You work over 300 learn-by-doing experiments at home, using DeVry Tech's exclusive Electro-Lab method. You build and KEEP valuable equipment. With another DeVry Tech exclusive, you have the benefit of training movies that you can show over and over until basic points are crystal clear. Special texts guide you every step of the way as well.

### HOW DeVRY TECH CAN "BLUEPRINT" YOUR CAREER!

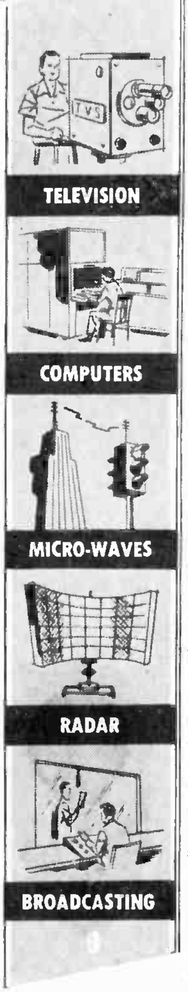
DeVry's faculty not only know how to teach Electronics, but they also understand men. They most likely know the type of problems you face. From this staff you get help, advice and understanding. It is this "human" side of DeVry's program that has caused many of our graduates to say: "DeVry Tech not only trains you for a job, they actually help you blueprint a profitable future!"

### NO ADVANCED EDUCATION NEEDED!

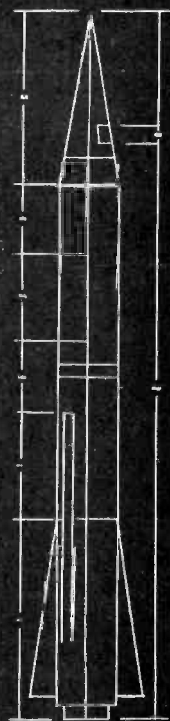
Why don't you write for FREE FACTS today? Learn how you TOO can be a member of the great fraternity of DeVry Tech graduates across the continent . . . men who were properly trained, encouraged, appreciated and understood! SEND IN COUPON NOW!

***EFFECTIVE EMPLOYMENT SERVICE***

DeVry Tech's effective Employment Service is available to all graduates without additional cost.




**LET DeVRY HELP YOU PREPARE AND BLUEPRINT A SOLID CAREER IN THIS FAST-GROWING FIELD!**




## 2 FREE BOOKLETS Send Coupon TODAY!

*"One of North America's Foremost Electronics Training Centers"*


Accredited Member of National Home Study Council

**DeVRY TECHNICAL INSTITUTE**
**CHICAGO • TORONTO**

### MAIL TODAY FOR FREE FACTS!

DeVRY TECHNICAL INSTITUTE
4141 Belmont Ave., Chicago 41, Ill., Dept. RTE-2-S

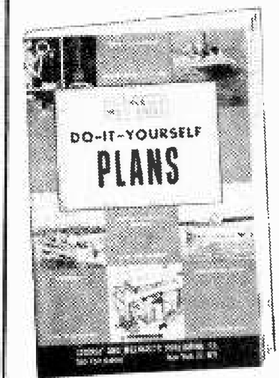
Please give me your 2 FREE BOOKLETS, "Pocket Guide to Real Earnings" and "Electronics in Space Travel;" also include details on how to prepare for a career in one or more branches of Electronics.

Name____________________ Age______
PLEASE PRINT
Street____________________ Apt.______
City____________ Zone____ State______
☐ Check here if you face military service.

Canadian residents address: DeVry Tech of Canada, Ltd.
2075 970 Lawrence Avenue West, Toronto 19, Ontario

# 212 DO-IT-YOURSELF ...PLANS... 25¢

## ILLUSTRATED CATALOG




Now you can get simple easy-to-understand plans for building boats, electrical equipment, models of gas and steam engines, famous firearms, antique automobiles, toys, games, cabin trailers, many other projects. In all, 212 useful things you can build. It's easy! It's fun! And you can save money! Send now for this brand new catalog.

SCIENCE AND MECHANICS CRAFTPRINT DIVISION
505 Park Avenue, New York 22, N. Y.

Enclosed is 25¢ which I understand will be refunded to me with my first order. Please send me the new 1962 edition of the Science and Mechanics Craftprint Catalog.

NAME .............................................
(PLEASE PRINT)

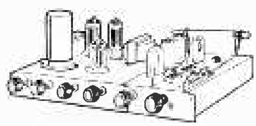
ADDRESS ..........................................

CITY ....................ZONE....STATE.........

## STEREO TUNER-AMPLIFIER
## *NEW PRODUCTION*

SPECIAL OFFERING

$22^50



High quality Stereo Phono Amplifier with specially designed Output Transformers to provide exceptional Base Response plus a sensitive AM Tuner. Output matches 4 or 8 ohm Speakers. Input gain for any medium level (.7 Volt) ceramic or crystal cartridges. Designed for cabinet installations, complete with knobs, escutcheon, 5 tubes and tested. Chassis size: 11¼" long by 5" deep by 1⅞" high. Also available as an Amplifier only less tuner at $14.95.

## TRANSISTOR BROADCASTER

A unique 2 Transistor Phono Oscillator which plays thru any broadcast band. Radio will operate mike or phono pickup. Originally designed to add Stereo to regular monaural system and priced at $16.75 each. SPECIAL CLOSE-OUT PRICE ONLY ............each $2.50

## *FREE CATALOG*

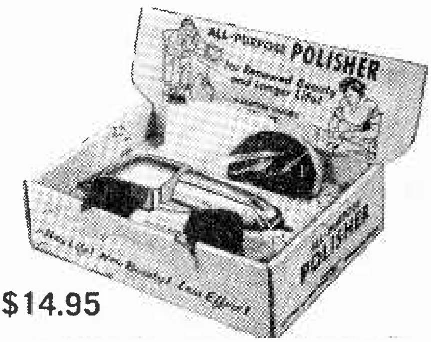
WRITE FOR YOUR COPY
OF BIG ELECTRONIC
PARTS BARGAINS.
MAILED ANYWHERE IN U.S.A.

**CAPITOL COMMODITIES CO. INC.**
4757 N. Ravenswood Ave., Chicago 40, Illinois
PHONES: LO 1-3355

# This S & M "Job-Tested" Electric Polishing Kit will add renewed beauty and long life to your

# • Leather Goods • Furniture • Automobile • Housewares

Now, you can do all your polishing chores in less than half the time! The S & M "Job-Tested" All Purpose Polishing Kit, complete with attachments is all new. Saves time because it's automatic. Saves money because it gives you longer shoe life, or keeps a protective coating of polish on your furniture and car. It's easy to use! Just touch the brush in the polish—the polisher does the rest.




**$14.95**

No more stained hands—no more hand polishing—no more mess to clean up afterwards. It's perfect for brushing suede shoes or handbags or jackets.

The S & M "Job-Tested" Polishing Kit features two 2" pure bristle brushes, two 4½" lambswool polishing bonnets, rubber backing pad and adapter set. Equipped with six foot cord, gleaming mirror finish. U/L approved. Perfect speed of 900 rpm, no load. Silent operation thanks to nylon gears that require no lubrication. Powered by rugged 115 volt, AC 25 to 60 cycle motor.

Order yours today.

**Science and Mechanics**
**PRODUCTS DIVISION**
505 PARK AVE./NEW YORK 22, N. Y.

YES...
Send______No. 104 S & M "Job-Tested" Polishing Kits. I am enclosing $14.95 for each. (Price in Canada is $16.45). No shipments outside U.S.A. and Canada.

Name______________________
(please print)

Address___________________

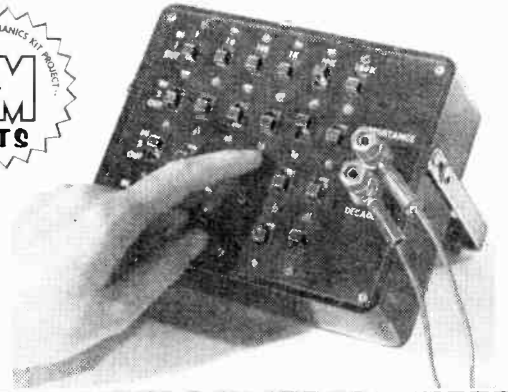
City__________Zone______State________

P609

# SEND NOW! For Complete Kit

- Any Resistance in One OHM Steps 0 to 1,111,110 OHMS
- Accurate within 1%
- Fast Switching Action
- Long Life-Durable
- First Quality Precision Components
- Can Be Assembled With Ordinary Hand Tools in Less Than 2 Hours

A SCIENCE and MECHANICS KIT PROJECT · S&M KITS




## *Less Than Retail Cost of Resistors Alone*

This is a real surplus buy that we're anxious to share with you. The components of this kit if purchased individually cost over $25.00. Yet, because of a surplus windfall we're able to send complete kit to you for only $14.95.

This is an S&M kit project and carries an unconditional guarantee of performance and accuracy. If for any reason you are unsatisfied with the performance of this unit, it may be returned within 10 days and your money will be refunded.

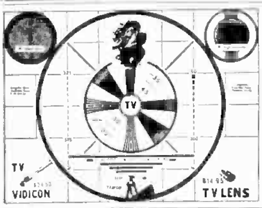
**SCIENCE AND MECHANICS, DEPT. 882, Kits Division**
**505 Park Avenue, New York 22, New York**
Add 10% for Canadian and Foreign orders.

Please send me........Complete Kits and plans for assembling the S&M Decade Resistance Box @ $14.95 each. I understand that if I am not completely satisfied I may return any kit within 10 days for a complete refund.

☐ Check or money order enclosed, ship postpaid.
☐ Send Decade Resistance Kit C.O.D. I will pay $14.95 plus postage and C.O.D. charges.

Name.......................................................
(please print)
Address....................................................
City.........................Zone....State...............

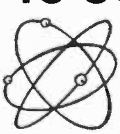
☐ Decade Resistance Box is also available fully assembled and tested at $19.95




## TV-CAMERA BUILT AT LOW COST
**DETAILS 50¢**

**DENSON ELECTRONICS CORP.**
**Box 85, Rockville, Conn.**

## 40 SCIENCE PROJECTS 75c



Wonders of science now explained with 40 fascinating projects you can build—Van de Graaff Generator, Tesla Coil, Wimshurst Static machine, solar furnace, chemical balance, cloud chambers, satellite 'scope, traveling arc and 32 other easy-to-make projects demonstrating scientific theory. All included in our big 192-page handbook, "Science Experimenter," No. 557. Price 75¢. Order your copy now! **SCIENCE AND MECHANICS, Craft Print Division, 505 Park Ave., New York 22, N. Y.**

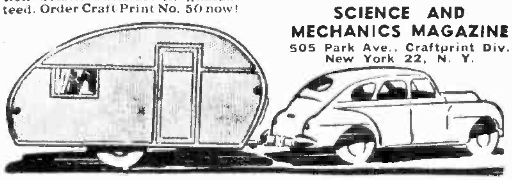
## Want a Trailer?

### *BUILD IT YOURSELF*

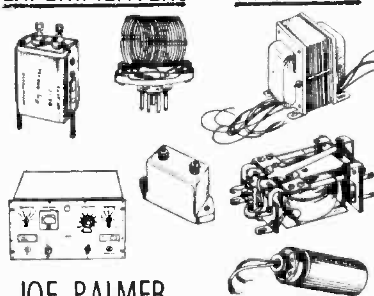
**PLANS $2.00**

Ideal for week-ends, fishing or vacation trips. Compact, roomy, comfortable; sleeps two people. Designed for all modern conveniences—sink, water tank and pump, stove, kitchen table, cupboard, clothes closet, drawer chest, storage space, electric lights, ventilator, etc. Sturdy, simple construction. Overall body length, 12 ft. 6 in., weight 1,100 lbs. Our master plan gives bill of materials, explains every construction detail. Satisfaction guaranteed. Order Craft Print No. 50 now!

**SCIENCE AND MECHANICS MAGAZINE**
505 Park Ave., Craftprint Div.
New York 22, N. Y.



## EXPERIMENTERS • AMATEURS • HOBBYISTS



Here's your chance to buy your electronic components at prices that are but a fraction of wholesale. We specialize in government surplus radio and electronic parts. Sit down right now and send us a postcard requesting your free copy of the 1962 catalog. It contains more than 70 pages of unequalled values with hundreds of illustrations. You will save more through buying by mail than you ever believed possible. Send for the catalog today; do it right now!

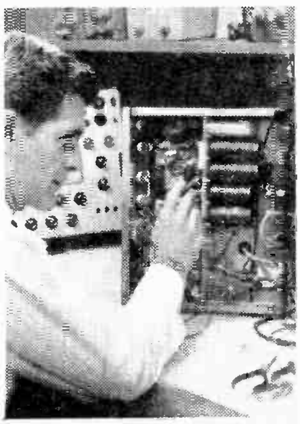
**JOE PALMER ELECTRONICS**
P.O. BOX 6188 CCC
SACRAMENTO, CALIFORNIA

WRITE TODAY FOR FREE CATALOG


# FREE — world's biggest electronic kit catalog

## Fastest growing hobby of the space age — Heathkits!

Explore this most rewarding of "do-it-yourself" ideas. Heath combines fine components and latest engineering techniques with complete check-by-step instructions to provide quality electronic kits with guaranteed performance specifications. Choose stereo/hi-fi, marine gear, ham radio, test & lab instruments, educational courses, home, hobby & auto items. It's fun, it's easy, and you save up to 50% . . . by buying direct and by assembling your own Heathkit.



**HEATHKIT** by Daystrom

☐ Please send my FREE copy of the 100 page 1963 Heathkit catalog describing over 250 electronic kits.

Name________________

Address________________

City________ Zone____ State____

**HEATH COMPANY**
**Benton Harbor 18, Michigan**

# What Does F.C.C. Mean To You?

### What is the F.C.C.?

F. C. C. stands for Federal Communications Commission. This is an agency of the Federal Government, created by Congress to regulate all wire and radio communication and radio and television broadcasting in the United States.

### What is an F.C.C. Operator License?

The F. C. C. requires that only qualified persons be allowed to install, maintain, and operate electronic communications equipment, including radio and television broadcast transmitters. To determine who is qualified to take on such responsibility, the F. C. C. gives technical examinations. Operator licenses are awarded to those who pass these examinations. There are different types and classes of operator licenses, based on the type and difficulty of the examination passed.

### What are the Different Types of Operator Licenses?

The F. C. C. grants three different types (or groups) of operator licenses—commercial radiotelePHONE, commercial radioteleGRAPH, and amateur.

COMMERCIAL RADIOTELEPHONE operator licenses are those required of technicians and engineers responsible for the proper operation of electronic equipment involved in the transmission of voice, music, or pictures. For example, a person who installs or maintains two-way mobile radio systems or radio and television broadcast equipment must hold a radiotelePHONE license. (A knowledge of Morse code is NOT required to obtain such a license.)

COMMERCIAL RADIOTELEGRAPH operator licenses are those required of the operators and maintenance men working with communications equipment which involves the use of Morse code. For example, a radio operator on board a merchant ship must hold a radioteleGRAPH license. (The ability to send and receive Morse is required to obtain such a license.)

AMATEUR operator licenses are those required of radio "hams"—people who are radio hobbyists and experimenters. (A knowledge of Morse code is necessary to be a "ham".)

### What are the Different Classes of RadiotelePHONE licenses?

Each type (or group) of license is divided into different *classes*. There are *three* classes of radiotelephone licenses, as follows:

(1) Third Class Radiotelephone License. No previous license or on-the-job experience is required to qualify for the examination for this license. The examination consists of F.C.C. Elements I and II covering radio laws, F.C.C. regulations, and basic operating practices.

(2) Second Class Radiotelephone License. No on-the-job experience is required for this examination. However, the applicant must have already passed examination Elements I and II. The *second class* radiotelephone examination consists of F. C. C. Element III. It is mostly technical and covers basic radiotelephone theory (including electrical calculations), vacuum tubes, transistors, amplifiers, oscillators, power supplies, amplitude modulation, frequency modulation, measuring instruments, transmitters, receivers, antennas and transmission lines, etc.

(3) First Class Radiotelephone License. No on-the-job experience is required to qualify for this examination. However, the applicant must have already passed examination Elements I, II, and III. (If the applicant wishes, he may take all four elements at the same sitting, but this is not the general practice.) The *first class* radiotelephone examination consists of F. C. C. Element IV. It is mostly technical covering advanced radiotelephone theory and basic television theory. This examination covers generally the same subject matter as the second class examination, but the questions are more difficult and involve more mathematics.

### Which License Qualifies for Which Jobs?

The THIRD CLASS radiotelephone license is of value primarily in that it qualifies you to take the second class examination. The scope of authority covered by a third class license is extremely limited.

The SECOND CLASS radiotelephone license qualifies you to install, maintain, and operate most all radiotelephone equipment except commercial broadcast station equipment.

The FIRST CLASS radiotelephone license qualifies you to install, maintain, and operate every type of radiotelephone equipment (except amateur, of course) including all radio and television stations in the United States, and in its Territories and Possessions. This is the highest class of radiotelephone license available.

### How Long Does it Take to Prepare for F.C.C. Exams?

The time required to prepare for FCC examinations naturally varies with the individual, depending on his background and aptitude. Grantham training prepares the student to pass FCC exams in a minimum of time.

In the Grantham *correspondence course*, the average beginner should prepare for his *second class* radiotelephone license after from 300 to 350 hours of study. This same student should then prepare for his *first class* license in approximately 75 additional hours of study.

In the Grantham *resident course*, the time normally required to complete the course and get your license is as follows:

In the M thru F DAY course, you should get your first class radiotelephone license at the end of the 12th week of classes.

In the M-W-F EVENING course, you should get your first class radiotelephone license at the end of the 20th week of classes.

In the Tu-Th EVENING course, you should get your first class radiotelephone license at the end of the 30th week of classes.

The Grantham course is designed specifically to prepare you to pass FCC examinations. All the instruction is presented with the FCC examinations in mind. In every lesson test and pre-examination you are given constant practice in answering FCC-type questions.

### Why Choose Grantham Training?

The Grantham Communications Electronics Course is planned primarily to lead to an F.C.C. license, but it does this by TEACHING electronics. This course can prepare you *quickly* to pass F. C. C. examinations because it presents the necessary principles of electronics in a simple "easy to grasp" manner. Each new idea is tied in with familiar ideas. Each new principle is presented first in simple, everyday language. Then after you understand the "what and why" of a certain principle, you are taught the technical language associated with that principle. You learn more electronics in less time, because we make the subject easy and interesting.

### Is the Grantham Course a "Memory Course"?

No doubt you've heard rumors about "memory courses" or "cram courses" offering "all the exact FCC questions". Ask anyone who has an FCC license if the necessary material can be memorized. Even if you had the exact exam questions and answers, it would be much more difficult to memorize this "meaningless" material than to learn to understand the subject. Choose the school that teaches you to thoroughly understand—choose Grantham School of Electronics.

### Is the Grantham Course Merely a "Coaching Service"?

Some schools and individuals offer a "coaching service" in FCC license preparation. The weakness of the "coaching service" method is that it presumes the student already has a knowledge of technical radio and approaches the subject on a "question and answer" basis. On the other hand, the Grantham course "begins at the beginning" and progresses in logical order from one point to another. Every subject is covered simply and in detail. The emphasis is on making the subject easy to understand. With each lesson, you receive an FCC-type test so you can discover daily just which points you do not understand and clear them up as you go along.

### Advanced Resident Training

The Grantham F.C.C. License Course is Section I of our Electronics Series. Successful completion of this course is a prerequisite for enrollment in Section II which deals with more advanced material. However, it is not necessary for the student to take Section II unless he wishes to advance beyond the level of a first class F.C.C. License.

## *Accredited by the National Home Study Council*

ACCREDITING COMMISSION • NATIONAL HOME STUDY COUNCIL • NHSC

### What NHSC Membership Means:

Over the years, people have come to respect membership in the National Home Study Council as a hallmark of quality. No school can be a member of the Council unless it has met the rigid standards set up by the Council's Accrediting Commission. This means that all schools, such as Grantham Schools, Inc., which display the seal of the National Home Study Council have demonstrated their integrity and adherence to high ethical standards. It means that they offer quality instruction at reasonable tuition rates. It means that these schools believe in, and are specialists in, the home study method of instruction.

*For further details concerning F.C.C. licenses and our training, send for our FREE booklet, "Grantham Training". Clip the coupon below and mail it to the School nearest you.*

**Get your First Class Commercial F.C.C. License Quickly by training at**

GSE

## GRANTHAM SCHOOL OF ELECTRONICS

| | | | |
|---|---|---|---|
| 1505 N. Western Ave. Los Angeles 27, Calif. (Phone: HO 7-7727) | 408 Marion Street Seattle 4, Wash. (Phone: MA 2-7227) | 3123 Gillham Road Kansas City 9, Mo. (Phone: JE 1-6320) | 821-19th Street, N.W. Washington 6, D.C. (Phone: ST 3-3614) |

**MAIL COUPON NOW—NO SALESMAN WILL CALL →**

**MAIL TO SCHOOL NEAREST YOU**

(Mail in envelope or paste on postal card)

**To: GRANTHAM SCHOOL OF ELECTRONICS**

1505 N. Western **Los Angeles** • 408 Marion **Seattle** • 3123 Gillham Rd. **Kansas City** • 821-19th. NW **Washington**

Please send me your free booklet telling how I can get my commercial F.C.C. license quickly. I understand there is no obligation and no salesman will call.

E-2R

Name ____________________ Age ______

Address ____________________

City ____________________ State ______

I am interested in: ☐ Home Study, ☐ Resident Classes

# Classified MARKET PLACE

**For Information on Classified ads—to be included in our next RADIO-TV EXPERIMENTER HANDBOOK and other Handbooks—write C. D. Wilson, Mgr., Classified Advertising, SCIENCE and MECHANICS HANDBOOK DEPT., 505 Park Ave., New York 22, N. Y.**

## AUTHOR'S SERVICE

LOOKING For A Publisher? Learn how we publish, promote, distribute your book. Free Booklet H-1. Vantage Press, 120 West 31st, New York 1.

PUBLISH your book! Join our successful authors; publicity advertising promotion, beautiful books. All subjects invited. Send for free appraisal and detailed booklet. Carlton Press, Dept. SMI, 84 Fifth Avenue, New York City 11.

## AUTO PARTS & ACCESSORIES

TIRED of paying excessive auto maintenance costs? Repair it yourself. Easier than you think in "Car Repair Handbook" #596. Stop oil leaks, make brakes safe, fix noisy muffler, avoid stalls. Special insert; gas mileage and speed computer. 162-page car bible yours for only $1.00. Handbook Div., Science and Mechanics, 505 Park Ave., New York 22, N. Y.

## BUSINESS OPPORTUNITIES

SHARPEN Saws and Lawnmowers the profitable way. Send for Free literature. Max Manufacturing Company, 138 Stockton Avenue, San Jose 26, Calif.

ASSEMBLE Artificial Lures at home for stores. Materials supplied Free. Profitable! Write: Lures, Ft. Walton Beach, Fla.

IF you send me 10¢, I'll send you "A $50.00 for $1.00 Opportunity Offer." King, 10 Catherine Ave., Waterbury 4, Conn.

OPERATE Own Investigation Agency. Make extra cash: Satellites, Box 172-S, Manhattanville Sta., New York 27, N. Y.

MAKE Mail Order pay. Get "How To Write a Classified Ad That Pulls." This handbook tells how, with examples: includes certificate worth $2.00 toward classified ad in S & M. Send $1.00 to C. D. Wilson, Science and Mechanics, 505 Park Ave., New York 22, N. Y.

## CAMERAS & PHOTO SUPPLIES

AT last! Build your own supersensitive light meter from complete kit with easy to follow instructions. Uses newest cadmium sulfide light cell, shows ASA speeds .3 to 25,000, F stops .7 to 90 measures accurately moonlight to bright sunlight. Send $19.95 to Kit Division, Science and Mechanics, 505 Park Ave., New York 22, N. Y. Money completely refunded if Kit returned within ten days for any reason.

## COINS, CURRENCY & TOKENS

GLITTERING Lucite Space-Age Paper Weight; Set Proof Coins seemingly floats in air $8.95. Beautiful large Bronze Medals —Alaska, Hawaii, President Kennedy's Inaugural—each $3.95. "Red"—Guidebook $1.75. Bebee's, 4514 North 30th, Omaha 11, Nebraska.

## DETECTIVES

DETECTIVE Training — Spare Time Study Learn Fascinating Profession. Men-Women. Big Money. Become Private Detective. We Help. Laws For 50 States On File. Barnes Detective, Box 490-S Times Square Station, New York 36, N. Y.

## DO IT YOURSELF

WHITE Polyester Foam Tape ⅜ x ¼—20 Ft. lengths. Thousands sold. Hundreds of Household uses. Only $1.00 Postpaid. Little Falls Import Company, P.O. Box 202, Little Falls, New Jersey.

CATALOG of all Science and Mechanics Craftprints. Send 25¢ to cover postage and Handling to Craftprint Div., Science and Mechanics, 505 Park Ave., New York 22.

## EDUCATION & INSTRUCTION

LEARN While Asleep with your recorder, phonograph or amazing new "Electronic Educator" endless tape recorder. Details free. Research Association, Box 24-HB, Olympia, Washington.

## ELECTRICAL EQUIPMENT & SUPPLIES

ELECTRIC Motor repairing simplified. Free Details. Modern, Box 8715, Kansas City 14, Mo.

COMPLETE kit with easy to follow instructions for building a high precision all purpose tachometer. 3 ranges. Measures speeds on tape recorders, lathes, cutting tools, auto engines, model plane engines, many more uses. Only $16.95. If not completely satisfied, kits may be returned within ten days for a complete refund. Kit Division, Science and Mechanics, 505 Park Ave., New York 22, N. Y.

## EMPLOYMENT INFORMATION

OPERATE Own collection agency. Spare time extra cash: Satellites, Box 172-S, Manhattanville Station, New York 27, New York.

## FOR INVENTORS

PATENT Searches, including copies of nearest patents, $6.00. Reports airmailed within 48 hours. More than 200 registered patent attorneys have used my service. Free invention protection forms. Write Miss Ann Hastings, P. O. Box 176, Washington 4, D. C.

SAVE High fees! Prepare your patent application yourself! New "Do-It-Yourself" Patent Kit now makes it easy! Free "Registration Form." Miss Blaine, 306 Carry Building, Washington 5, D. C.

PATENT Searches, including copies of related U. S. patents, $6.00. Inventors, attorneys, manufacturers use my "World-wide" airmail service. "Invention Record" form and Information Every Inventor Needs, sent free. Miss Hayward, 1029 Vermont Ave., N.W., Washington 5, D. C.

THOUSANDS of expert answers to your patent questions. 160 pages covering marketing, attorney's fees, clinics, searches, many other subjects. Send only $1.00 for Inventor's Handbook #600 to Science and Mechanics, Handbook Div., 505 Park Ave., New York 22.

## FOR SALE—MISCELLANEOUS

COMMUNICATIONS, Teletype, Unusual Surplus. Free Flyer. MDC, 923 W. Schiller, Philadelphia 40.

## GOVERNMENT SURPLUS

TECH Manuals. Your surplus electronic items are more valuable if you understand them completely. Over 1000 different original manuals in stock, all with schematics. Complete lists of titles plus booklet "How to Buy Gov't Surplus" 50¢. Refunded with first order. Propagation Products Co., P. O. Box 242, Jacksonville 1, Florida.

## HI-FI EQUIPMENT

HI FI Optics, Cameras, Tools, Fishing Tackle. Free Catalog. GM Photoelectronics, 623 Gay, Knoxville 2, Tenn.

## HYPNOTISM

HYPNOTIZE Self, Others while asleep with amazing hypnotic phonograph records, tapes. Catalog free. Research Association, Box 24-HB, Olympia, Wash.

## MONEYMAKING OPPORTUNITIES

SECOND Income From Oil Can End Your Toil! Free Book and Oilfield Maps! National Petroleum, Pan-American Building-SM, Miami 38, Fla.

## PATENT SERVICE

PATENT Searches, including copies of nearest patents, $6.00. Reports airmailed within 48 hours. More than 200 registered patent attorneys have used my service. Free invention protection forms. Write Miss Ann Hastings, P. O. Box 176, Washington 4, D. C.

SAVE High fees! Prepare your patent application yourself! New "Do-It-Yourself" Patent Kit now makes it easy! Free "Registration Form." Miss Blaine, 306 Carry Building, Washington 5, D. C.

## PERSONAL

ADULTS! Unusual Books. Catalog 25¢. Venus, 562 San Jose, San Francisco 10.

## PETS—DOGS, BIRDS, RABBITS, HAMSTERS, ETC.

MAKE big money raising rabbits for us. Information 25¢. Keeney Brothers, New Freedom, Penna.

## PHOTO FINISHING, ETC.

A Free Roll of Kodak Film with each developing and printing. Guaranteed Quality send for free mailers. Economy Photo Service, Dept. S, P. O. Box 1111, Albany, New York.

## PRINTING, MIMEOGRAPHING & MULTIGRAPHING

LABELS, Business Cards, Rubber Stamps, Envelopes. Free Literature. Heights Industries, Capitol Heights 27, Maryland.

## SALESMEN WANTED

SELL Chenille Bedspreads, Rugs on Liberal COD plan. Free Details. National Chenilles, 705 Burchfield, Dalton 5, Georgia.

## SCIENCE EXPERIMENTS

SATELLITE computer pinpoints positions. Easily explained in Science Fair Projects #594. 25 top-rated plans designed to help you win. Challenging, illustrated plans for super lightmeter, motorized orrery. Send $1 to Science and Mechanics, Handbook Div., 505 Park Avenue, New York 22.

## STAMP COLLECTING

100 DIFFERENT U. S. commemoratives 25¢. Approvals. Gordon Davison, Henniker 7, New Hampshire.

50 DIFFERENT 10¢, with approvals. U.S. Comm, Topicals, Others. Carpenter, Box 310, Claremont, Calif.

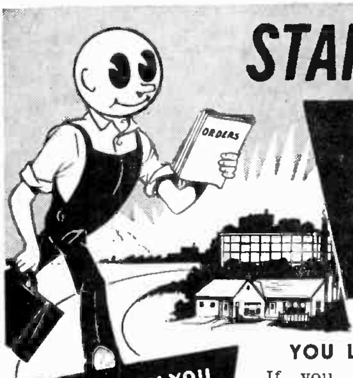
## TOYS, GAMES & ENTERTAINMENT

192 Page Hard Cover Book detailing plans for 78 action toys, thrilling games and fascinating playthings. Special postpaid price $1.95. Order Toys & Games Book from Science and Mechanics, Book Div., 505 Park Ave., New York 22.

## WANTED TO BUY

RETAIL metal or plastic telescoping tubes. J. Cronwell, 1007 North Cass St., Milwaukee 2, Wis.

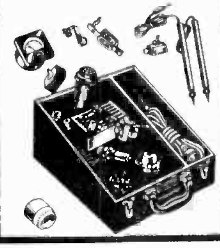
# START YOUR OWN BUSINESS




# REPAIR ELECTRIC APPLIANCES

**WE FURNISH YOU THIS AMAZING ELECTRONIC KIT**

"CHRISTY" MULTI-TESTER PINPOINTS ELECTRICAL TROUBLES FOR YOU.



### EARN WHILE YOU LEARN IN SPARE TIME

If you are mechanically inclined (like-to fix things and work with tools) we can teach you this fascinating, big money field.

### EVERYTHING SENT TO YOU

Illustrated lesson manuals, testing equipment, business building aids, where to buy parts wholesale, what to charge all sent to you.

### $5.00-$6.00 AN HOUR

Often charged by service technicians for making ordinary repairs. We show you how to rewind motors, repair refrigerators, vacuum cleaners, washer-dryers, etc.

### GET A BIG PAYING JOB

Christy training enables you to apply as a first class electrical service technician at good wages. The need for trained men is great . . . the supply is limited.

**Send for FREE BOOK and PAY LATER PLAN**


MAIL THIS COUPON TODAY

**CHRISTY TRADES SCHOOL, Dept. A-711**
**3214 W. Lawrence Ave., Chicago 25**

Please send me your FREE Book on Electrical Equipment Servicing and full facts about how I EARN AS I LEARN.

Name ........................................ Age ......

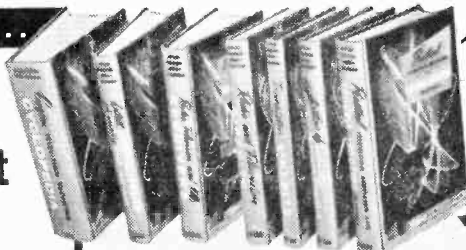
Address ..............................................

City ......................... Zone ..... State ............

---

**TV-RADIO Servicemen or Beginners...**

# Send for Coyne's 7-Volume Job-Training Set on 7-Day *FREE TRIAL!*



The First Practical TV-RADIO-ELECTRONICS Shop Library!

### Like Having An Electronics Expert Right At Your Side!

VOL. 1—EVERYTHING ON TV-RADIO PRINCIPLES! 300 pages of practical explanations; hundreds of illustrations.

VOL. 2—EVERYTHING ON TV-RADIO-FM RECEIVERS; 403 pages; fully illustrated.

VOL. 3—EVERYTHING ON TV-RADIO CIRCUITS! 336 pages; hundreds of illustrations, circuit diagrams.

VOL. 4—EVERYTHING ON SERVICING INSTRUMENTS! How they work, how to use them. 368 pages; illustrated.

VOL. 5—EVERYTHING ON TV TROUBLESHOOTING! Covers all types of sets. 437 pages; illustrations, diagrams.

VOL. 6—TV CYCLOPEDIA! Quick and concise answers to TV problems in alphabetical order, including UHF, Color TV and Transistors; 868 pages.

VOL. 7—TRANSISTOR CIRCUIT HANDBOOK! Practical Reference covering Transistor Applications; over 200 Circuit Diagrams; 410 pages.

BOOKS HAVE BRIGHT, VINYL CLOTH WASHABLE COVERS

## Answers ALL Servicing Problems QUICKLY . . . Makes You Worth More On The Job!

Put money-making, time-saving TV-RADIO-ELECTRONICS know-how at your fingertips—examine Coyne's all-new 7-Volume TV-RADIO-ELECTRONICS Reference Set for 7 days at our expense! Shows you the way to easier TV-Radio repair—time saving, practical working knowledge that helps you get the BIG money! How to install, service and align ALL radio and TV sets, even color-TV, UHF, FM and transistorized equipment. New photo-instruction shows you what makes equipment "tick." No complicated math or theory—just practical facts you can put to use immediately right in the shop, or for ready reference at home. Over 3000 pages; 1200 diagrams; 10,000 facts!

**SEND NO MONEY!** Just mail coupon for 7-Volume TV-Radio Set on 7-Day FREE TRIAL! We'll include the FREE BOOK below. If you keep the set, pay only $3 in 7 days and $3 per month until $27.25 plus postage is paid. Cash price only $24.95. Or return set at our expense in 7 days and owe nothing. Either way, the FREE BOOK is yours to keep. Offer limited, so act NOW!

**"LEARNED MORE FROM THEM THAN FROM 5 YEARS WORK!"**

"Learned more from your first two volumes than from 5 years work." —Guy Bliss, New York

"Swell set for either the serviceman or the beginner. Every service bench should have one."—Melvin Masbruch, Iowa.

### FREE DIAGRAM BOOK!

We'll send you this big book, "150 Radio-Television Picture Patterns and Diagrams Explained" ABSOLUTELY FREE Just for examining Coyne's 7-Volume Shop Library on 7-Day FREE TRIAL! Shows how to cut servicing time by reading picture-patterns, plus schematic diagrams for many TV and radio sets. Yours FREE whether you keep the 7-Volume Set or not! Mail coupon TODAY!


**Coyne** Educational Book Publishing Division
ELECTRICAL SCHOOL
1455 W. Congress Parkway Dept. 92-RH Chicago 7, Illinois

**FREE BOOK—FREE TRIAL COUPON!**

Educational Book Publishing Division
**COYNE ELECTRICAL SCHOOL**
1455 W. Congress Parkway, Dept. 92-RH, Chicago 7, Illinois

Yes! Send me COYNE'S 7-Volume Applied Practical TV-RADIO-ELECTRONICS Set for 7-Days FREE TRIAL per offer. Include "Patterns & Diagrams" book FREE!

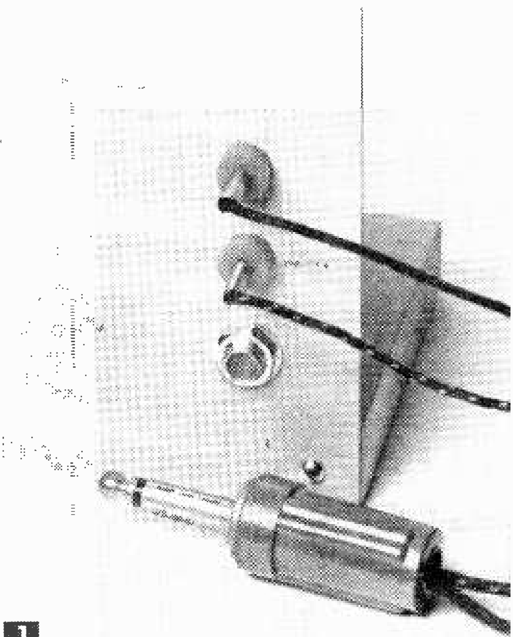
Name ............................ Age ......

Address ..................................

City .................. Zone .... State ........

☐ Check here if you want Set sent C.O.D. Coyne pays postage on C.O.D. and cash orders. 7-Day Money-Back Guarantee.

# Dual Jacks for Earphones



**1**

**Twin installation of jacks gives you instant choice of phones or speaker without the need to remove plugs.**

WHEN building a radio, or any other electronic gear where phones may be desirable, it's a good idea to install a pair of phone tip jacks as well as the regular phone jack, or a phone jack besides the regular phone tip jacks.

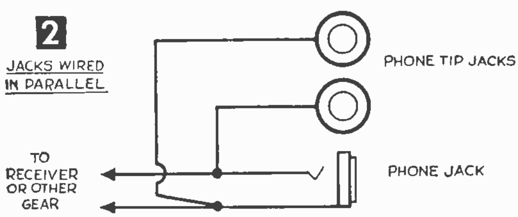
With the simple installation in Fig. 1, you can quickly connect various phones without adding or removing phone plugs, and without need for any adapters.

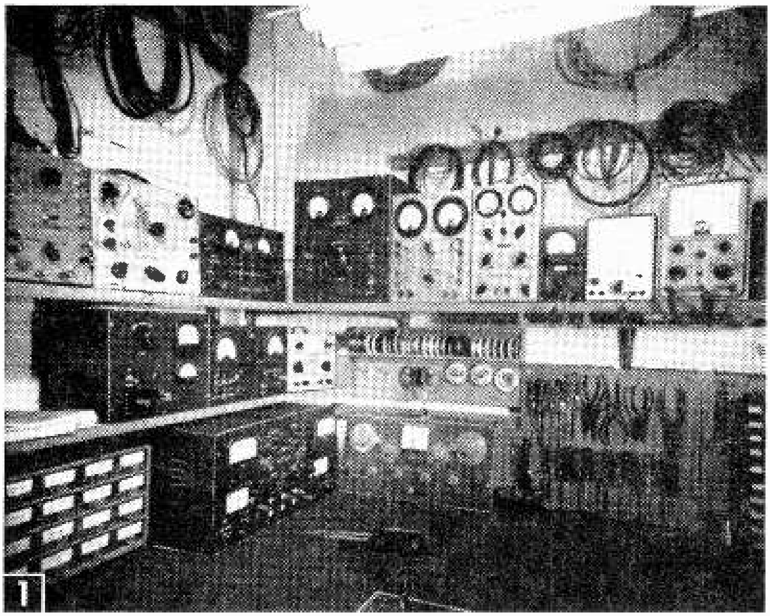
You can locate phone tip jacks immediately above the phone jack or alongside of it, whichever makes the best appearance. The closer the jacks, the easier it is to wire them in parallel as in Fig. 2.

This trick also lets you use two pairs of phones connected in parallel.—ART TRAUFFER.

**2**

JACKS WIRED IN PARALLEL





RADIO-TV EXPERIMENTER

U-shaped shop the author built up over several years includes more than a dozen pieces of test equipment featured in this and previous issues of RADIO-TV EXPERIMENTER. Left side of shop (Fig. 1), reading from left to right, includes: (top row) resonance meter, RC bridge, transistor power supply, low voltage supply iron-core inductance meter, electronic resistive load, 1000-ohm/volt VOM, VTVM; (center) very high voltage supply, ac power panel, ac-dc voltage standard, wire rack; (bottom) utility power supply, impedance bridge, tool board.

# The Complete Electronic Shop

**Your guide to the most needed test equipment for the five major fields of work**

**By W. F. GEPHART**

WHAT pieces of test equipment are most important? How much equipment is needed?

There are no simple answers. While some equipment is important and nearly essential in all electronic work, some is "specialist" equipment required primarily for one particular type of work. And some items are not absolutely necessary even for specialty work if you are willing to build temporary test circuits.

Table 1 lists some of the test equipment desirable for each of the five major fields of electronic work. They appear in general order of importance.

Some of the items must be homemade, some are available in kits, and a few are available only in commercial units. All of the equipment listed in the "experimental work" column of Table 1 is shown in Figs. 1 and 2. While the experimental shop pictured is well equipped for experimental work and radio servicing, and fairly well for hi-fi and citizen's band-amateur work, it does not include several essential items for television servicing.

Arrangement of equipment in the shop should be organized. Place measuring units such as VTVMs and VOMs directly in front of the work area for easy reading. Group signal generators (both RF and AF), oscilloscope and the electronic switch together since they are often used together. Group power supplies if you use more than one, but keep them away from the oscilloscope and signal generators to prevent possible hum induction. You can place some seldom-used items which do not require ac power to one side on shelves and bring them to the work area when needed.

Each piece of equipment shown in Figs. 1 and 2 is identified and its use described in the following paragraphs. Some of the items are seldom used, but are extremely handy when needed. In the case of home-built equipment, the numbers following many of the descriptions represent the handbook numbers of this or other issues of RADIO-TV EXPERIMENTER in which the complete construction article for the particular unit appeared (see note below).

These units include five featured in projects elsewhere in this issue. Numbers in parentheses refer to previous issues contain-

NOTE: You can order any of the back issues of RADIO-TV EXPERIMENTER to obtain the complete "how-to" information for building the testing units designated, except No. 595, which is out of print. Order by handbook number from SCIENCE and MECHANICS, 505 Park Ave., New York 22, and enclose $1 for each copy desired to cover handling and mailing costs.

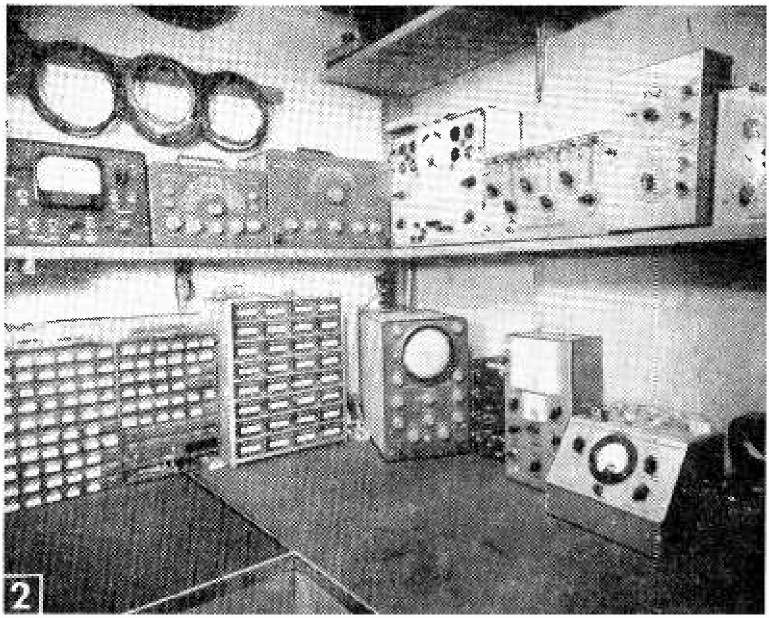


Fig. 2. Right side of shop, left to right: (top) signal tracer, RF generator, AF generator, tube tester, 10% resistance decade, capacity substitution box, 1% resistance decade; (bottom) small parts cabinet, resistor cabinet, oscilloscope, electronic switch and voltage calibrator, transistor tester, battery tester-recharger.

ing construction articles of similar equipment.

**Resonance Meter:** Used with a VTVM and an RF or AF signal generator to measure resonant frequency of coil-and-condenser combinations. Also measures crystal frequencies and activity, as well as unknown frequencies by the "beat-note" method. #595.

**Resistance-Capacity Bridge:** Measures resistance and capacity at 10% accuracy. Checks capacitors for leakage, shorts, and power factor. Permits ratio measurement between known and unknown capacity, resistance, or inductance. A commercial kit, it has been modified to include an in-circuit capacity checker. A full description begins on p. 148.

**Transistor Power Supply:** Furnishes two separate sources of well-filtered dc voltage, 0-30 volts, for powering experimental transistor circuits or servicing transistorized equipment. Dual meters and switching circuits permit separate or simultaneous measurement of voltage and current. For the complete construction story, turn to p. 36.

**Very High Voltage Power Supply:** Furnishes variable high voltage (1000 to 5000 volts) at low currents for work with CR tubes, Geiger tubes, photo-multipliers, etc.

**AC Power Panel:** Furnishes variable line voltage (0-140 volts) at 7.5 amperes for testing purposes. Voltmeter and ammeter permit measurement of load drawn. #569.

**AC-DC Voltage Standard:** Provides 99% accurate ac and dc voltages and currents for calibrating other test equipment. The accurate voltages can also be used in precise testing and experimental work. See p. 53 for complete details on building this project.

**Utility Power Supply:** Furnishes two sources of filtered, adjustable dc voltage (each 0-400 volts at 150 *ma*), adjustable bias voltage (0-25 volts), four dc and five ac filament voltages. Current and/or voltage of either of both HV sources, and bias voltage can be read on dual meters. Used as voltage source on experimental circuits, or as substitute supply in servicing work. #551.

**Low Voltage Supply:** Provides adjustable, filtered dc voltage (0-48 volts) at high current (to 8 amperes), for work with auto and aircraft radios, relay circuits, etc.

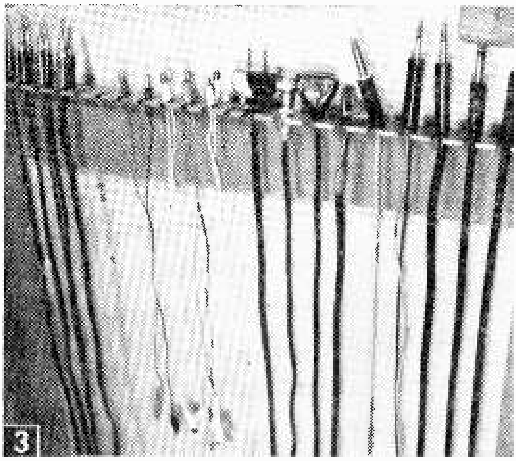
**Iron-Core Inductance Meter:** Used with a VTVM, this unit measures inductance of iron-core chokes with the desired dc current flowing through them. Also measures the impedance ratios of audio transformers and determines output and saturation points of iron-core components. Primarily used in design work and in utilization of unmarked components. Construction of this meter is fully described in the article beginning on p. 140.

**Electronic Resistive Load:** Determines power supply output under various loads. Can also be used to determine optimum value of bleeder or dropping resistors.

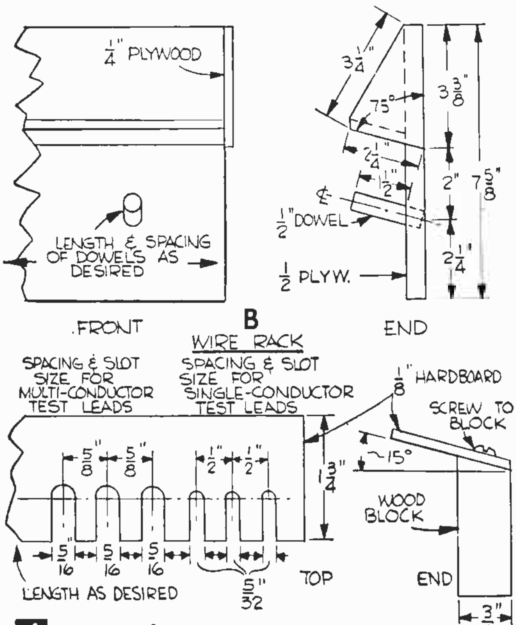
**20,000-ohm/volt Volt-Ohm-Milliammeter:** The familiar VOM, a medium-input impedance meter to measure ac or dc current and resistance. Commercial kit.

**1000-ohm/volt Volt-Ohm-Milliammeter:** Another VOM, a low-input impedance meter to measure ac or dc current and resistance. While this is a commercial kit meter, you will find the construction of a similar unit in #576.

**Vacuum-Tube Voltmeter:** The VTVM, a most important instrument, which measures ac and dc voltages with high input impedance



3 Wall rack holds all types of test leads which can be removed and replaced with minimum effort.




4 A TEST LEAD RACK

and resistance to 1000 megs. Commercial kit.

**Signal Tracer:** Provides audible and metered means of tracing a signal through equipment to determine troublesome stage. Can also be used as utility amplifier, test, speaker, or speaker tester. Includes an ac-dc VTVM that can be used separately. #551.

**RF Signal Generator:** Provides AM radio frequency signals for alignment and testing, or for experimental radio control work. Commercial kit.

**AF Signal Generator:** Provides sine and square wave audio frequency signals for amplifier testing and experimentation. Commercial kit.

**Impedance Bridge:** Measures inductance, resistance, and capacity over wide range at high accuracy. Also measures dissipation factor and storage factor. Used in design work and for accurate checking of component values. Commercial kit.

**Tube Tester:** Checks tubes for emission, shorts and leakage. Commercial kit.

**10% Resistance Decade:** Provides any 10% resistance value from 10 ohms to 10 megohms in 10-ohm steps. Can be used as a substitute resistance in servicing work or test resistance in experimentation. Switches separate decades for multiple usage. #562.

**1% Resistance Decade:** Provides any 1% resistance from .1 ohm to 10,000 ohms in .1-ohm steps. Used in measuring resistances, designing meter shunts and multipliers. Construction of this type of decade box is featured in a project beginning on p. 110.

**Capacitor Substitution Box:** Provides two sets of 18 different bypass and four different electrolytic condensers to be used as substitute condensers in servicing or as test condensers in experimentation. Switching two sets in series or parallel provides choice of several hundred capacitance values. #576.

**Oscilloscope:** Required in TV servicing and vital to hi-fidelity work, this unit provides a means of viewing AF and RF signals. Can also be used to measure voltages, phase relationships, frequencies, etc., in experimental work. Commercial kit, but you can build a similar unit with the aid of the project article, "Large Screen Scopes from Discarded TV Sets," featured in #551.

**Electronic Switch, Voltage Calibrator:** Used with an oscilloscope, it provides for viewing two separate signals (such as input and output) simultaneously to check equipment performance. Also provides accurate voltages to calibrate a 'scope for voltage measurements. #576 (#582).

**Transistor Tester:** Measures ac and dc current gain of transistors under various inputs and supply voltages. Also checks leakage. #595 (#569, #576).

**Battery Tester-Charger:** Tests batteries under load and charges or rejuvenates wet or dry batteries used in test equipment and transistor radios. Construction of this unit is revealed in article starting on p. 134.

**Test Leads.** In addition to having proper equipment and an organized layout, test leads are a shop problem. Generally, they are not needed until the equipment is actually used, so they can be stored out of the way. For the regularly-used VTVM and/or VOM, however, leads should be plugged into the equipment. After wrestling with leads for years, I solved my problem as in Fig. 6. In this shop, leads can be plugged into either or both units at all times, but be out of the way when not being used.

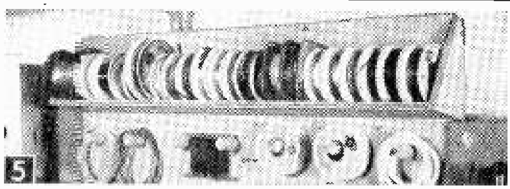
After buying the required number of retractile test leads, attach a flat box to the

**TABLE I—ELECTRONIC TEST EQUIPMENT DESIRABLE FOR:**

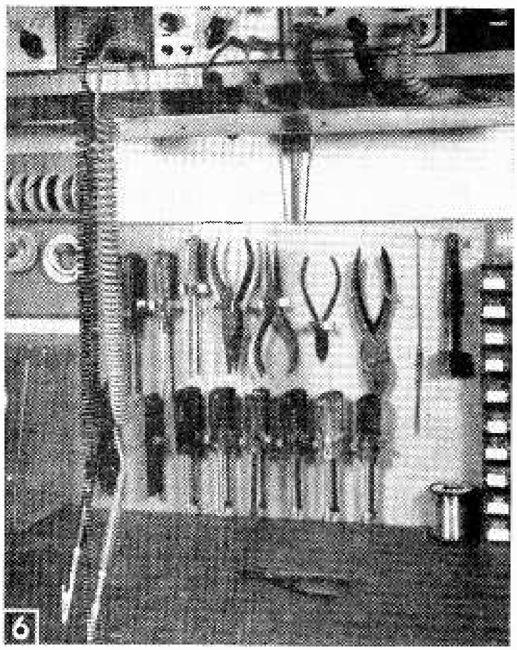
| Experimental Work | Radio Servicing | Television Servicing | Hi-Fidelity Work | Citizens' Band and Amateur |
|---|---|---|---|---|
| VTVM | VTVM | VTVM | VTVM | VTVM |
| Utility Power Supply | Signal Tracer | Sweep Generator | AF Generator | Field Strength Meter |
| 10% Res. Decade | Tube Tester | Oscilloscope | Oscilloscope | VOM |
| Cap. Subs. Box | RF Generator | Bar & Dot Gen. | VOM | Oscilloscope |
| VOM | VOM | Tube Tester (1) | AF Analyzer (2) | Low Voltage Sply (3) |
| Oscilloscope | R-C Bridge | VOM | Electronic Switch | RF Generator |
| Trans. Power Supply | Utility Power Supply | R-C Bridge | Tube Tester | Dummy Load |
| Voltage Standard | Trans. Power Supply | 10% Res. Decade | R-C Bridge | Tube Tester |
| RF Generator | 10% Res. Decade | Cap. Subs. Box | Utility Supply (4) | Utility Supply (5) |
| AF Generator | Cap. Subs. Box | Power Panel | 10% Res. Decade (4) | 10% Res. Decade (5) |
| Tube Tester | Transistor Tester | Field Strength Meter | Cap. Subs. Box (4) | Cap. Subs. Box (5) |
| Transistor Tester | Low Voltage Supply | | Transistor Tester (6) | Resonance Meter (5) |
| Impedance Bridge | Oscilloscope | | Trans Power Supply (6) | Impedance Bridge (5) |
| Electronic Switch | AF Generator | | Iron-Core Inductance Meter (4) | Iron-Core Inductance Meter (5) |
| Power Panel | Power Panel | | | |
| Resonance Meter | | | | |
| Resistive Load | | | | |
| Iron-Core Inductance Meter | | | | |
| 1% Res. Decade | | | | |
| Low Voltage Supply | | | | |
| Very HV Supply | | | | |
| Signal Tracer | | | | |
| R-C Bridge | | | | |

**NOTES**

(1)—Mutual conductance type tester.
(2)—To measure distortion, inter-modulation, watts, etc.
(3)—Required if mobile equipment involved.
(4)—Required if experimental amplifier work is done.
(5)—Required if circuit development work is done.
(6)—Required if transistorized equipment is used.



Wire rack holds assorted spools and coils.



Test leads (top) are quickly accessible when stored in flat box built-in under equipment shelf.

bottom of the shelf under the equipment as in Fig. 6. Even when plugged into the equipment, the body of the retractile leads can be stuffed in the box with the prod points sticking out. When ready to take readings, they slip out easily when the prods are pulled.

The simple hanger shown in Figs 3 and 4A will store other leads on a nearby wall. You can slot a piece of hardboard to fit the leads and fasten it to the wall at an angle. The leads will slip in and out of place quickly, without tangling or kinking.

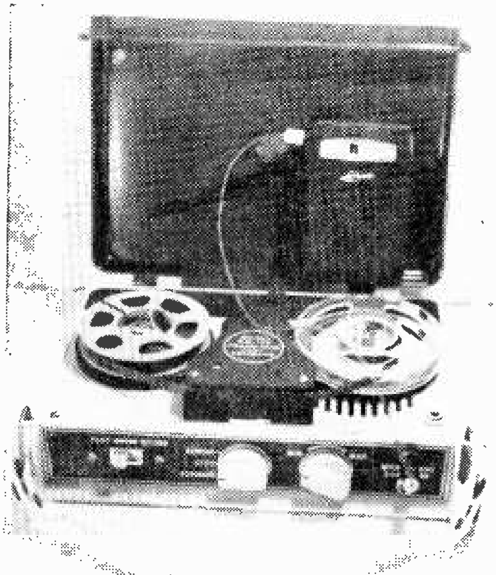
**Keeping Wire Straight.** If you use many different kinds of wire, especially the color-coded kind, the wire rack in Fig. 5 will be extremely handy. You can build it to dimensions shown in Fig. 4B to handle the usual round or square roll, after determining the proper length to suit your needs and available space.

**Tool Accessibility.** To keep your tools handy, you can easily build a tool board as in Fig. 6. Common utility clips sold in hardware stores hold the tools to the board, which has a painted image for each tool to reveal instantly where to put it instead of dropping it on the bench to get lost in a maze of other loose tools. Such a board should be located within easy reach of your work area.

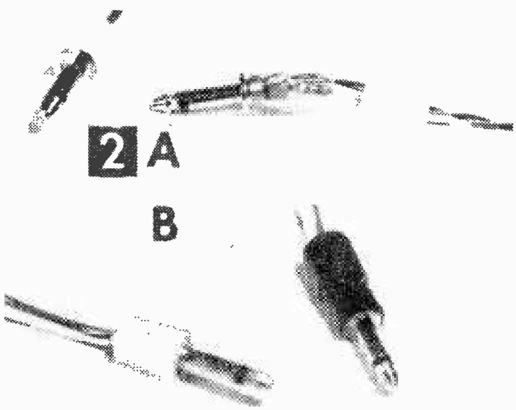
All equipment shown in Table 1 and described here is obviously not required, but it is all useful and helpful in the various phases of electronic work.

# Miniature Patch Cord

## For portable recording with transistor equipment



**1** The patch cord connects your portable radio to your portable recorder and allows you to hear what is being recorded.



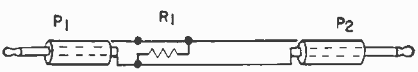

(A) Solder-in the resistor with rosin core solder and (B) tape the cap neatly to the plug.

MATERIALS LIST—MINIATURE PATCH CORD

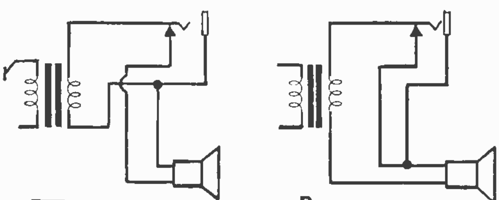
| Desig. | Description |
|---|---|
| R1 | 5.1 ohm, 1/10 watt miniature carbon resistor (Lafayette RS-250, specify resistance) |
| P1, P2 | subminiature phone plugs (Lafayette MS-281) |
| 2½ ft. | #24 stranded hook-up wire (Lafayette WR-223 is a 100-ft. roll) |
| Misc. | electrical tape and rosin core solder<br>Parts available from Lafayette Radio, 111 Jericho Turnpike, Syosset, L. I., N. Y. |

IF YOU own a portable transistor radio and a portable transistor recorder, you'll have much use for this miniaturized patch cord. Requiring practically no storage space, it permits quick and easy connection for recording. Furthermore, you can monitor what you're recording by making a small modification to the portable radio phone jack.

The patch cord circuit is shown in Fig. 3.




**3** PATCH CORD CIRCUIT



**4** A PORTABLE PHONE JACK CIRCUIT BEFORE MODIFICATION

B PHONE JACK CIRCUIT AFTER MODIFICATION. THIS ARRANGEMENT WITH PATCH CORD DESCRIBED ALLOWS YOU TO HEAR WHAT YOU'RE RECORDING.

The resistor R1 acts as part of a voltage divider in the phone jack circuit of Fig. 4B. Part of the signal energy actually gets to the radio speaker to give you sound monitoring of the material you're recording. There is a small signal voltage drop across the resistor which is connected in series with the speaker voice coil. The radio output to the recorder input appears across the resistor.

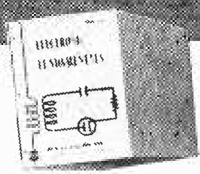
The resistor, although small, is still too large to permit the shell of the phone plug to be screwed onto the plug. Push the shell in as close to the plug as you can, and tape it in place. Use several layers of tape to make the neat and rugged assembly shown in Fig. 2. It doesn't matter which plug you use with the radio or the recorder.

Most transistor portable radios have the phone jack connected as shown in Fig. 4A. You can use the patch cord with this circuit, but you won't be able to hear what you're recording unless you change the phone jack circuit on the radio to conform to Fig. 4B. This feature is important since you can tell when you want to start and stop your recorder. The phone jack will operate as it did before the modification, except that some signal will leak to the loudspeaker voice coil when the headphone plug is inserted.—FORREST H. FRANTZ SR.

# RCA training at home can be the smartest investment you ever made

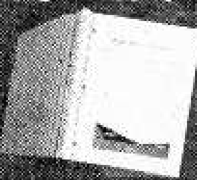
## Look what you get in the Course in Radio and Electronic Fundamentals

**40 Fascinating THEORY LESSONS**



Containing all the basic principles of radio and electronics in easy-to-understand form.

**40 EXPERIMENT LESSONS**



Each containing absorbing, practical experiments bound together in 20 books.

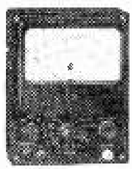
**40 SERVICE PRACTICES**

Full of practical, time-saving and money-saving servicing tips, bound into 20 books.

## PLUS ALL THIS AT NO EXTRA COST...

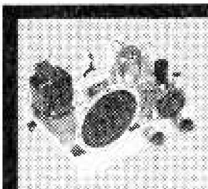
### 15 KITS

**to build a Multimeter, AM Receiver and Signal Generator. Kits contain new parts for experiments, integrated so as to demonstrate what you learn in the lessons and to help you develop technical skills. Each kit is fun to put together!**



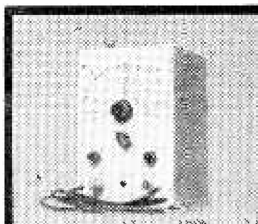
### MULTIMETER

A sensitive precision measuring instrument you *build* and *use* on the job. Big 4½" meter with 50 microamp meter movement 20,000 ohms-per-volt sensitivity d-c, 6,667 a-c.



### AM RECEIVER

Have the satisfaction of building your own radio receiver with this high-quality 6-tube superheterodyne set. Big 5" speaker, fine tone!



### SIGNAL GENERATOR

A "must" for aligning and trouble-shooting receivers. Build it for your own use. 170 KC to 50 MC fundamental frequencies for all radio and TV work.

**LET RCA TRAIN YOU AT HOME**
RCA Institutes, one of the leading technical institutes in the United States devoted exclusively to electronics, offers you the finest training-at-home. The very name "RCA" means dependability, integrity, and scientific advance. Practical work with your very first basic lesson. You build and keep prime quality equipment. Pay as you learn. No installment payments necessary. You pay for your next study group only when you order it. And remember, in electronics the more you know the higher you go. Licensed by the University of the State of New York.

**CLASSROOM TRAINING**
Classroom training in New York City and Los Angeles. Day and Evening classes start four times a year. In addition, Radio Corporation of America offers a limited number of basic courses in Chicago, Philadelphia, and Cherry Hill, N. J. (near Camden). Indicate your preference on attached card.

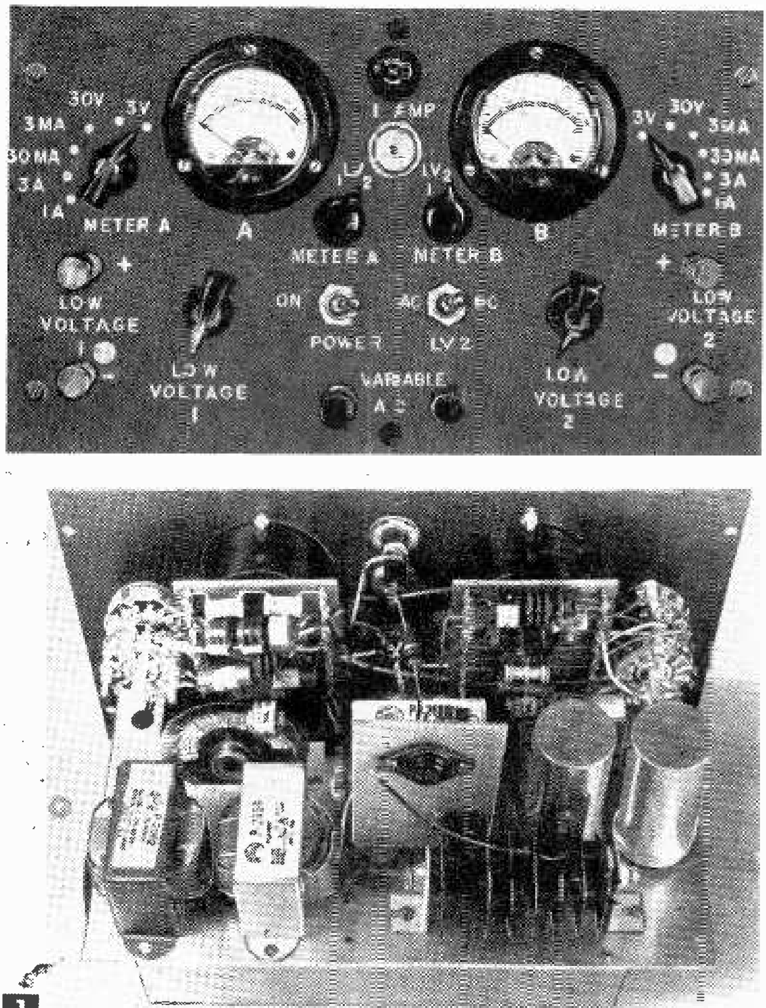
*SEND POSTCARD FOR FREE ILLUSTRATED BOOK TODAY!*
Check Home Study or Resident School Box

**RCA INSTITUTES, INC.** A SERVICE OF RADIO CORPORATION OF AMERICA,
350 WEST 4TH ST., NEW YORK 14, N. Y. 610 S. MAIN ST., LOS ANGELES 14, CALIF.
The Most Trusted Name in Electronics ® Dep't. RX-92

# Power Supplies for Transistors

**To eliminate the expense (and bother) of using batteries when you are experimenting with transistors, build this ac-supplied variable power supply**

By W. F. GEPHART




**1**

Front and back panel views of dual power supply schematicized in Figs. 6 and 7. Note in back panel view the meter resistor mounting and the "heat sink"-mounting of power transistor (center of photo).

THE design of a variable power supply for conventional (pre-transistor) radio work is relatively simple: Usually, a voltage range of 50-500 *v* (1:10 ratio) and a current range to 200 *ma* (1:200 ratio) will do. A versatile transistor power supply, however, need only furnish between 1.5 and 30 *v* (1:20 ratio)—but with currents up to nearly 1 *amp* (1:1000 ratio), and with an extremely low ripple in order to simulate battery operation. Due to the wider variations required, the high currents involved in power transistors, and the need for good filtering, then, several problems arise.

Figure 4A shows a simple power supply for transistor equipment. While it is fairly suitable for powering low-powered devices, it is not satisfactory for bench or experimental work. Even if $R_3$ were made variable, the voltage output would still be dependent upon the current being drawn, which causes a voltage drop across $R_1$ and $R_2$. This type supply is also unsatisfactory because one side of the line voltage is connected to the output.

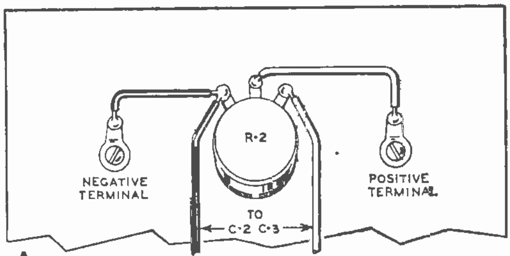
Figure 4B shows a simple bench-type supply. The danger of contact with line voltage is eliminated in this unit by using a transformer, and the lower resistance within the circuit permits greater control of the output voltage with variable resistor $R_2$. Using a choke (L) instead of a resistance (as in 4A) provides better filtering, but again presents the problem of a varying voltage drop as the current drawn varies. Furthermore, the amount of current that can be drawn is limited by the choke. While chokes capable of handling up to 300 or 400 *ma* are readily available, chokes capable of handling higher currents are bulky, heavy and quite expensive. Also, to minimize bleeder current (and thus minimize voltage drop across the choke with no load), the resistance $R_2$ has to be relatively high, yet must be capable of handling full load current, thus presenting problems at high currents. With a value of 2500 ohms, for example, and a full load current of 750 *ma*. $R_2$ would have to be rated in excess of 1000 watts. This type of bench variable voltage supply can be used, however, up to about 50 *ma* if the components are chosen properly.

Figure 4C shows the circuit to be used for a high-current, well-filtered variable supply. The output is isolated from the line by transformer $T_2$ and variation in voltage is secured by varying the primary voltage of $T_2$ with an auto-transformer ($T_1$). This permits variation on the high-voltage, low-current side, enabling the use of a small auto-transformer. The current-limiting problem introduced by the choke is eliminated by using a power transistor (or two), providing excellent filtering with a small, but relatively constant voltage drop.

Transistors, like pentode tubes, "saturate" beyond certain bias points. That is, beyond these points, variation in input signal will have no effect on the output. If a transistor is biased beyond a certain point, ripple variations included in the *dc* input will not be included in the *dc* output. The same could be done with an ordinary pentode tube, except that ordinary pentodes are not capable of handling the high currents involved. The bias on the transistor is furnished through the resistor-capacitor network of $R_1$, $C_2$ and $R_2$ which provides sufficient filtering for bias purposes. The output current flows through the collector-emitter circuit, and with final filter capacitor $C_3$, ripple is less than .01%, equal to battery supply for virtually any application.

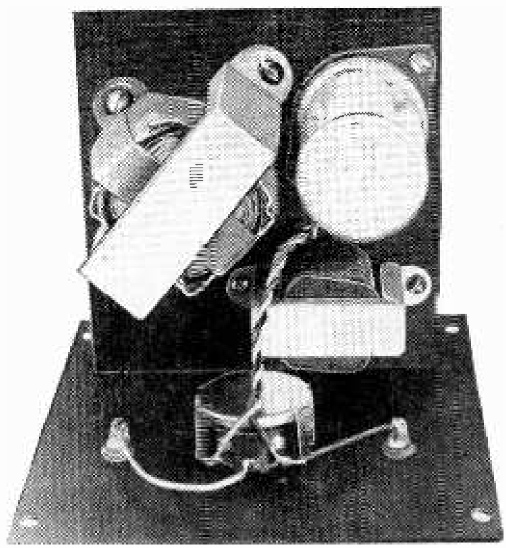
As pointed out, the transistor-filter circuit is only required when current requirements are fairly high, and the circuit in Figure 4B is satisfactory for most low-current applications. If very pure *dc* is required, the filter section of Fig. 4C (consisting of $C_1$, $C_2$, $C_3$, $R_1$, $R_2$, and V) can be used with the circuit of Fig. 4B, substituting it for the choke-capacitor filter (L, $C_1$ and $C_2$), and still use an output resistance for voltage variation. Filtering action is even better, since the transistor bias is constant in this case.

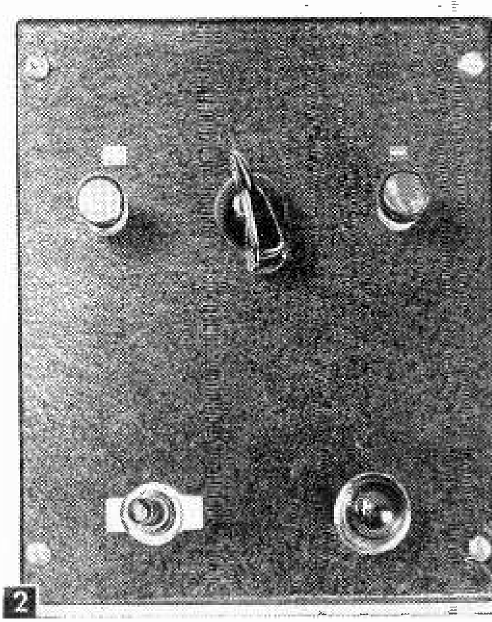
In designing a bench supply, voltage requirements, as well as current requirements, should be considered. Even some low-current circuits use a fairly high (22½ to 30) voltage. Several of the components will involve a voltage drop, and allowance for this should be made when planning the output voltage. In low-current supplies (50 *ma* or less) germanium diodes make excellent rectifiers and have less voltage drop than selenium units. When using chokes, select a happy medium between inductance and resistance, to minimize voltage drop.



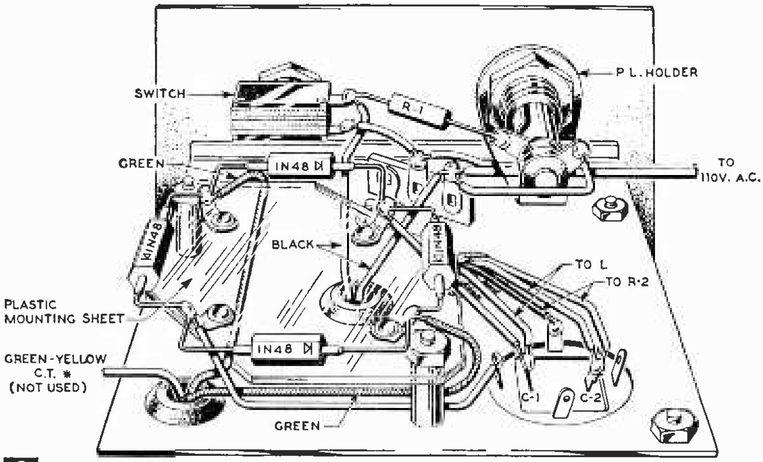

A PICTORIAL

Front and back panel views of power supply schematicized in Fig. 4B, is shown above and below. Under-chassis wiring is shown in Fig. 3.





2




**3** PICTORIAL

* ONLY ON CERTAIN MAKES OF TRANSFORMERS

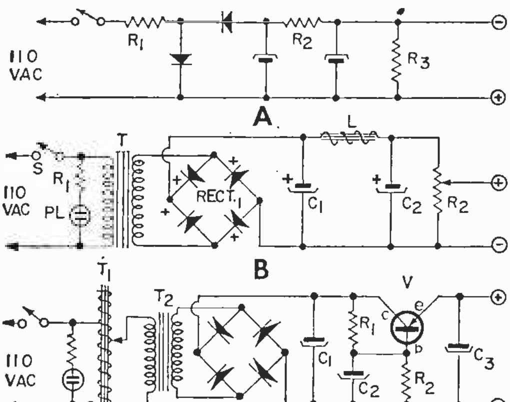
Figures 2, 3, and 5 show the details of a low-current supply using the circuit shown in Fig. 4B. Component values are included in the Materials List, using the nomenclature shown on Fig. 4B. This supply, using the parts listed, will furnish voltage and current as follows:

0-26.5 *v* at no load
0-16.5 *v* at 15 *ma*
0-14.5 *v* at 20 *ma*
0-10.0 *v* at 30 *ma*
0- 5.5 *v* at 50 *ma*

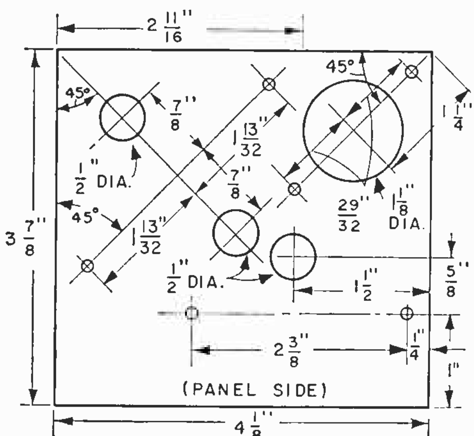
Since even the larger transistor radios draw only 15-20 *ma* at 6-9 *v* this supply will meet most requirements.

The unit shown was placed in a small metal cabinet and equipped with a pilot light, neither of which is necessary, but both of which are recommended (chassis and panel layouts are shown in Fig 5). The diodes were mounted on a piece of plastic raised from the chassis with spacers, although they could have been wired in a bridge circuit using tie points. Some wiring could be eliminated if chassis and cabinet were grounded, but it is recommended that the case be isolated. Due to the varying polarities in transistor equipment, trouble might be encountered if it isn't.

**In experimental work,** quite often it is necessary to have a separate bias supply, or two isolated supplies for one unit under test. Sometimes, one need requires high current; the other low current; while in other cases, both require low current. Figures 6 and 7 show the complete dual supply, shown in Fig. 1 for bench and experimental work. The unit is made up of one circuit

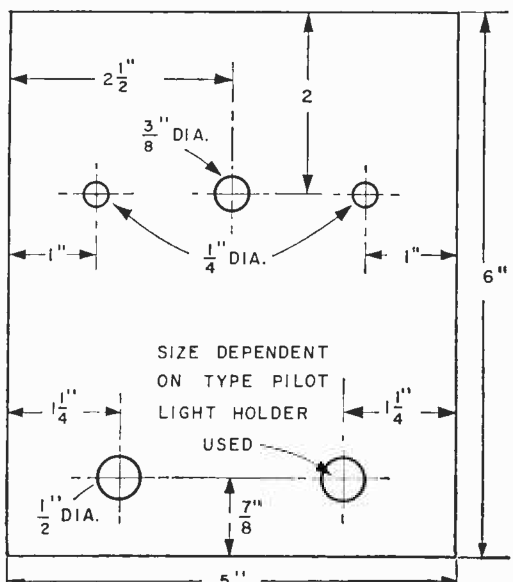



**4**




TOP VIEW OF CHASSIS.

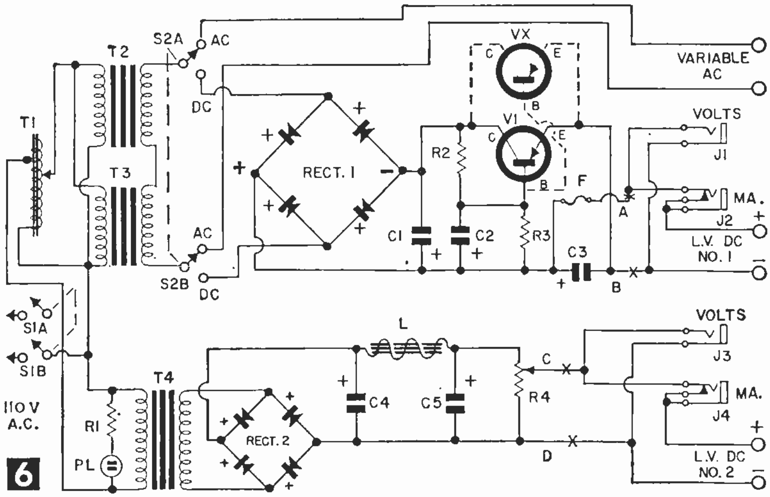
(CHASSIS ATTACHED TO PANEL ON SPECIFIED CABINET)




**5** FRONT VIEW OF PANEL

identical with that in Fig. 4B, and one circuit similar to that in Fig. 4C, and has built-in meters and switching circuits. The twin meters can measure voltage *or* current for either supply, or can be switched so that the meters measure voltage *and* current of *either* supply, keeping both circuits isolated from each other.

The schematic for this dual supply is shown in Fig. 6. Meter jacks, instead of meters and related switches, are shown, since the elimination of meters, shunts and switches greatly reduces the cost of the unit. If it is desired to build the complete unit on a "progressive" basis, holes for the meters and switches should be drilled in the panel at the time of construction, the switch holes plugged with hole plugs, and the meter jacks mounted in plastic or Bakelite plates mounted in the meter holes. (In any event, the jacks must be insulated from the chassis.) Then later, if it is desired to add the meter circuits, it can be done without drilling into a panel on which components are mounted and wiring completed.



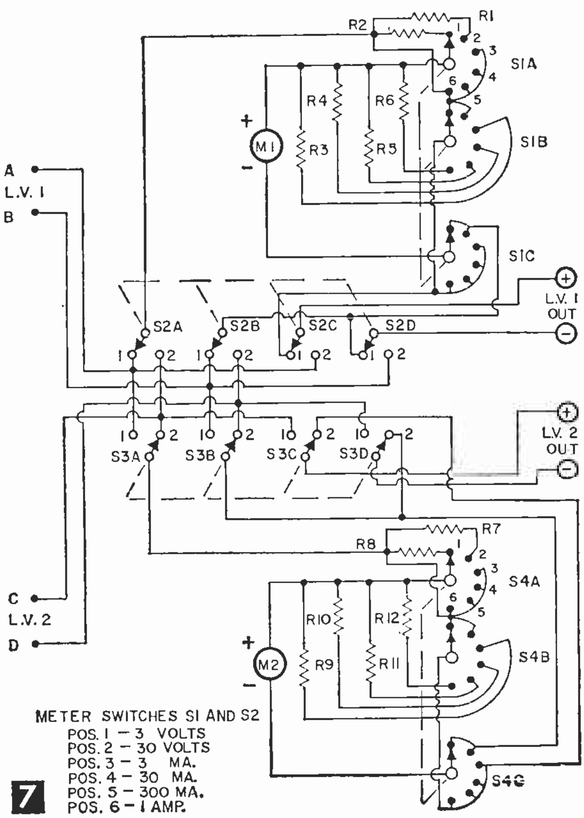
6

In Fig. 6, a second transistor (Vx) is shown in dotted lines, parallel with $V_1$. This is required only if the desired output current is to exceed 700 *ma* and if used, should be mounted on a "heat sink" (as is $V_1$). This "heat sink" (which is common to the collector) should be insulated from the chassis, to keep the chassis and cabinet isolated. Also, if Vx is used, the value of $R_3$ should be reduced to approximately half of the value given in the Materials List.

In the high-current supply, an auto-transformer, two filament transformers, and a germanium rectifier provide the *dc* voltage. While a high-current selenium rectifier would be somewhat cheaper, the voltage drop would require another filament transformer, and stability would not be as good at low voltages and current.

The high-current supply, using the parts specified, furnishes in excess of 30 *v* (transistor limit) with no load, and slightly over 19 *v* at 700 *ma* (full load). If current in excess of 700 *ma* is desired, the larger rectifier mentioned in the Materials List, as well as the second transistor Vx, should be used. Under those conditions, loads to about 1.1 amperes would be permissible.

In Fig. 6, $S_2$ switches the transformer output to a set of binding posts, since it was felt that there would sometimes be a need for variable *ac* between 0 and 56 *v*. Fig. 7 shows the dual meter circuits used. The input leads of these circuits are connected to points "A", "B", "C" & "D" in Fig. 6, and the jacks cut out at the points marked "X". The values of the shunt resistors used are not furnished, since they will depend on the meters used. In the unit shown, the meters were surplus 0-500 microammeters, although 0-1 *ma* meters would do just as well.



7

MATERIALS LIST—TRANSISTOR POWER SUPPLIES

Shown in Figures 2, 3, 4B, and 5

| | |
|---|---|
| R1 | 56,000 ohms, ½ watt* |
| R2 | 10,000 ohm potentiometer |
| C1, C2 | 100-100 mf. 50 volt (Cornell-Dublier B0085 or Mallory WP202.5) |
| T | 25 volt filament transformer (Merit P-2962) |
| L | 4.5 hy, 50 ma., 200 ohm choke (Merit C-2977) |
| Rect. | Four 1N48 diodes, bridge-connected |
| PL | NE-51 neon bulb |
| | Small cabinet with chassis (Bud C-1796), pilot light holder, binding posts, knob, miscellaneous hardware |

Components shown in Figs. 1 and 6

| | |
|---|---|
| R1 | 56,000 ohm, ½ watt* |
| R2 | 470 ohms, 1 watt |
| R3 | 1200 ohms, 1 watt |
| R4 | 10,000 ohm potentiometer |
| C1 | 500 mf. 50 volt (Cornell-Dublier 5005) |
| C2 | 250 mf. 50 volt (Cornell-Dublier 2505, Sprague TVA-1312, Mallory TC-50025) |
| C3 | 50 mf. 50 volt |
| T1 | Auto-transformer, 0-130 volts @ 1.25 amp. (Superior Type 10, Standard Electric 100BU) |
| T2, T4 | 25 volt filament transformer (Merit P-2962) |
| T3 | 12.6 volt filament transformer (Merit P-2959) |
| L | 4.5 hy, 50 ma., 200 ohm choke (Merit C-2977) |
| Rect. 1 | 70 volt, .7 amp. Germanium Bridge (General Electric 4AJ211AB1AC1) Note: If higher current desired, use 70 VAC 1.4 amp. (General Electric 4AJ211AB1AC2) |
| Rect. 2 | Four 1N48 diodes, bridge-connected |
| S1 | DPST toggle |
| S2 | DPDT toggle |
| PL | NE-51 neon bulb |
| J1, J3 | Open circuit jacks |
| J2, J4 | Closed circuit jacks |
| Cabinet | (Bud CC-1092), aluminum for chassis, binding posts, knobs, miscellaneous hardware |
| | * Not required if included in pilot light holder such as Dialco series 952208 or 95408X. |

Components shown in Fig. 7

| | |
|---|---|
| R1 through R12 | See text |
| M1, M2 | See text |
| S1, S4 | 3 pole. 6 pos. rotary switch (Centralab 1421, Mallory 1335L) Note: Mallory 3236J can be used if 20° spacing is acceptable |
| S2, S3 | 4 pole, 2 position rotary switch (Mallory 3242J) |

The most accurate means of determining shunt and dropping resistor values is to use an accurate resistance decade, a variable voltage source, and an accurate voltmeter and milliammeter. In this method, voltage-dropping resistances are selected by taking a known voltage, feeding it into the proposed meter through the decade, and adjusting the decade for the desired reading. Current shunts are determined in a similar manner, by establishing a known current through a load, placing the proposed meter in the circuit (with the decade connected across its terminals), and adjusting the decade for the desired reading.

If equipment is not available, required resistances can be determined by calculations, using the following formulas:

For voltages series resistance:

$$R_s = \frac{E_r}{I_m} - R_m$$

$R_s$—Series resistance required (ohms)
$E_r$—Desired full-scale range (volts)
$I_m$—Full scale range of meter (amperes)
$R_m$—Internal resistance of meter (ohms)

For current shunt resistances:

$$R_s = \frac{I_m R_m}{I_r - I_m}$$

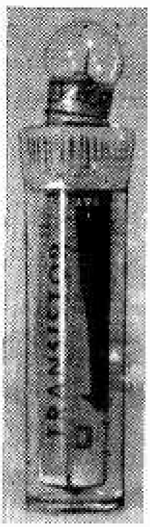
$R_s$—Shunt resistance required (ohms)
$I_m$—Full scale range of meter (amperes)
$R_m$—Internal resistance of meter (ohms)
$I_r$—Desired full scale range (amperes)

In the latter formula, at high current values, $I_m$ may be disregarded in the formula as being insignificant.

The meter ranges on the low-current supply (No. 2) need not have as high current ranges as the No. 1 meter. The meter selector switches ($S_2$ and $S_3$ in Fig. 7) permit voltage reading from *either* output, but current readings only on the associated circuit. For example, with both $S_2$ and $S_3$ on Position 1, meter $M_1$ will read *either* the voltage or current of output 1, and meter $M_2$ will *only* read voltage of output 1.

In the unit shown in Fig. 1, the meter resistors were mounted on terminal boards fastened to the meter terminals, saving space and wiring. (A few of the components pictured in Fig. 1 are not exactly those specified in the Materials List.)

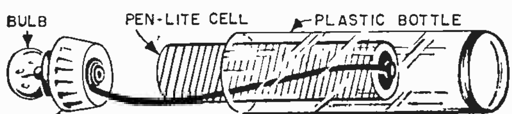
# Emergency Lite



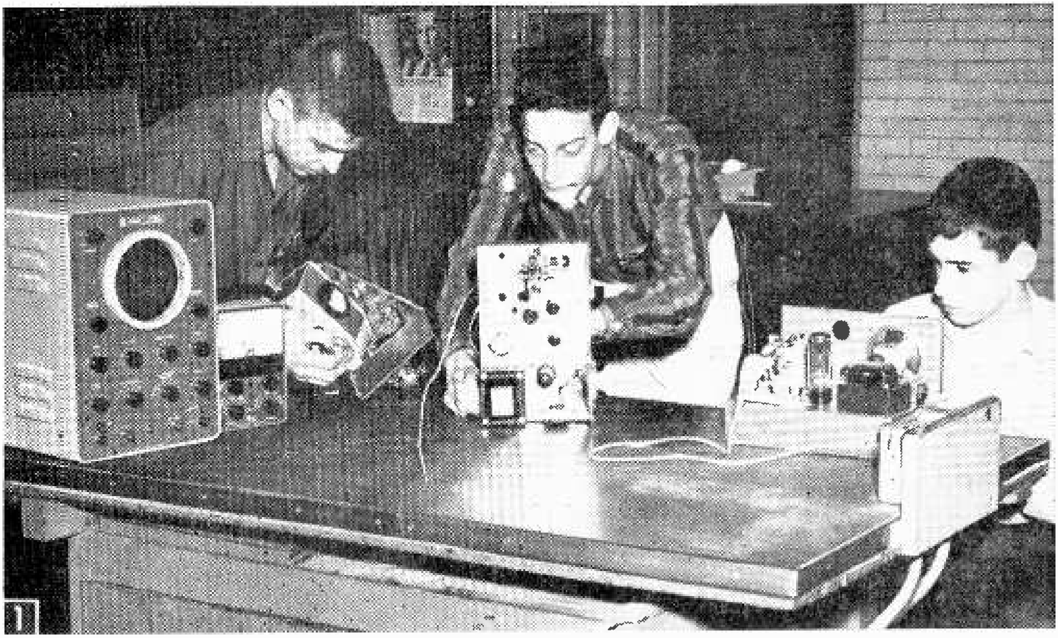
AN investment of about a quarter and five minutes of your time converts a small plastic bottle into a pocket-size emergency light. The bottle doesn't cost you a cent. If you're a transistor experimenter, you can use one of the bottles in which General Electric transistors are packaged (this same kind of bottle is frequently used by pharmacists as a pill box). In addition to the bottle you need only a flashlight bulb and a small pen-lite battery.

To make the emergency lite, ream a hole in the bottle top just large enough to allow the bulb to be screwed into it. Solder a piece of thin insulated wire to the shell of the bulb. I used #28, silk-covered magnet wire. Solder the other end of the wire to the center terminal of the battery. Insert the battery and bottle top, with bulb, into the bottle with the center battery terminal down.

To turn the light On, push the bottle top on tight. To turn it Off, loosen the top slightly.—FORREST H. FRANTZ.




EMERGENCY LITE



1

Students at work on their transceivers. They have nick-named it "Puddle Jumper" because of their success in contacting stations across the puddle of Lake Michigan.

# Puddle Jumper

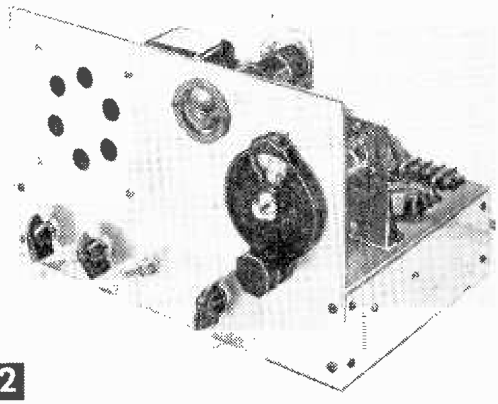
## A Two-Meter Amateur Transceiver

**Compact and portable, it provides both voice and modulated code communications with a 6- to 15-watt power input and can be built for half the cost of a commercial rig**

By WILLIAM BUSHNELL and C. F. ROCKEY, W9SCH/W9EDC

TWO years ago we presented a two-meter amateur station which was designed to be used as an introduction to the construction of serious electronics equipment, and to serve as a practical communications unit as well.

Since this transceiver is a laboratory project in an amateur radio course at New Trier, a Chicago suburban high school, increased experimentation has resulted in a number of modifications which have produced a vastly improved version of the original station. The students have nicknamed it "Puddle Jumper," and many sets are currently in operation.

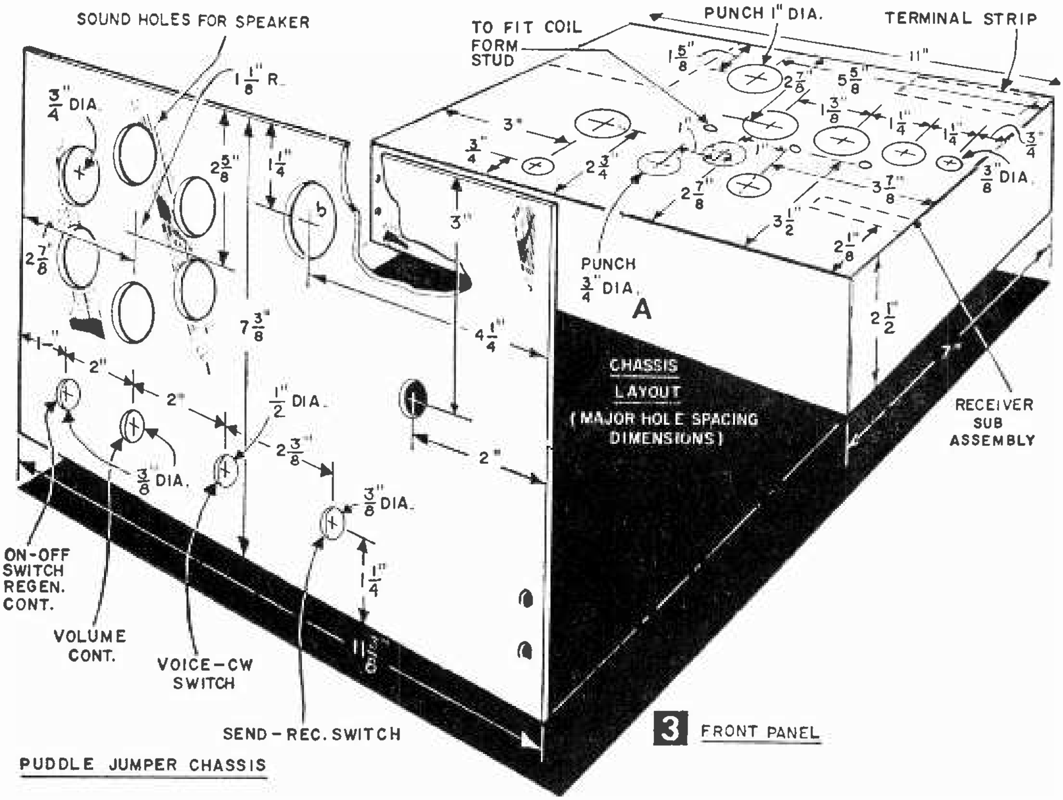


2

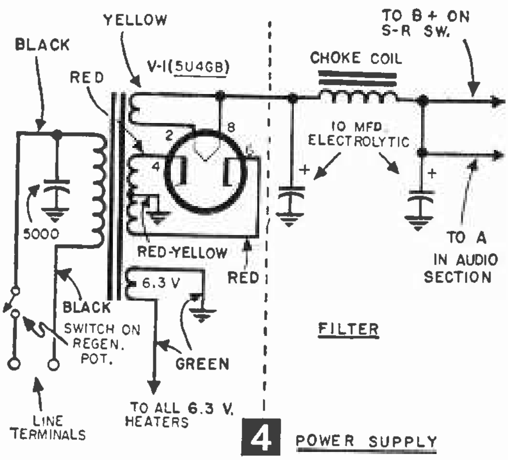
The Puddle Jumper introduces you to advanced electronics and can be built simply by following the schematics.

Puddle Jumper operates in the 144-148 megacycle band, and can be used by the holder of any class amateur license, but the user must be licensed. It makes a fine beginner's station as well as a handy standby set for the old-timer. Although the set is not suited for citizens band use, it can be an excellent facility for civil defense.

**Start Construction** by drilling and punching the major holes in the front panel and chassis (Fig. 3 and 3A). Fasten the panel to




**3** FRONT PANEL




**4** POWER SUPPLY

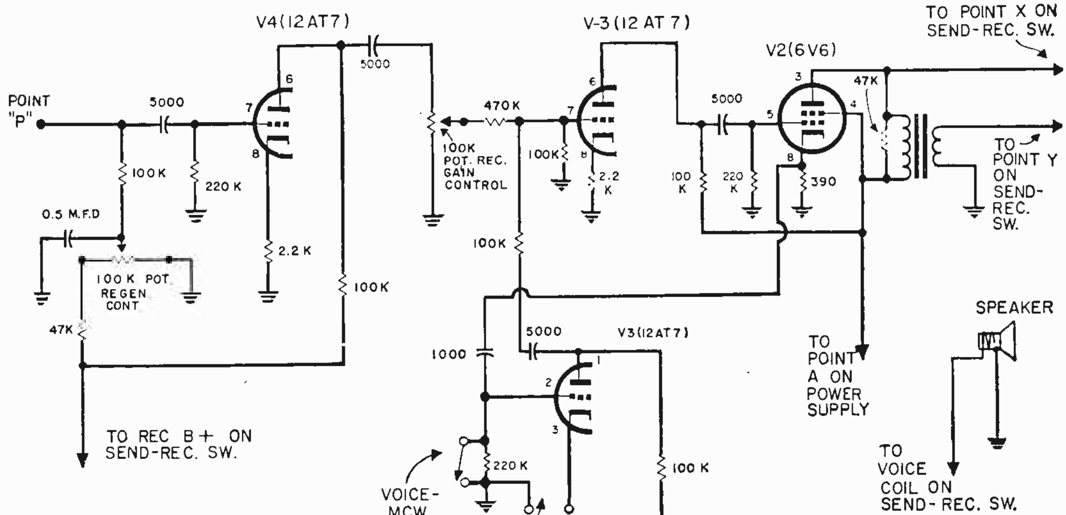
the chassis and drill the holes for potentiometers and switches. Mount the power transformer, 5U4GB rectifier tube socket, and Jones barrier terminal strip. Fasten the regeneration control pot with its on-off power line switch to the panel.

**Power Supply Wiring.** Connect the transformer leads to the rectifier, then wire-in the 120-volt leads (Fig. 4). The electrolytic filter capacitors are held in place by their integral mounting lugs, and their positive leads terminate on insulated tie lugs.

Install and connect the filter choke coil. Ground one side of the 6.3-volt heater winding, and bring the other side out to one of the unused lugs on the rectifier tube socket. This will facilitate connection to the heaters of the other tubes.

After you've wired and carefully checked the power supply, measure the resistance between the positive connection to the last filter capacitor and ground. There should be more than 10,000 ohms of resistance between these two points. Less resistance indicates a wrong connection or short-circuit. When this condition has been met, connect the line cord to its terminals on the terminal strip, and insert the 5U4GB rectifier tube in its socket. With plug in socket, and power switch on, the rectifier tube filaments should glow dull red, and a dc voltage of at least 300 volts (more won't hurt) should be observed from the positive terminal of the last filter capacitor to ground.

**Audio Frequency Section.** When the power supply is operational, remove the rectifier tube and line cord and attach the AF sockets. This section includes one and one-half 12AT7s and the 6V6. The 12AT7 sockets are mounted with 4-40 x ¼-in. round head (*rh*) machine screws and hex nuts. Be sure to put a soldering lug under one of the mounting




**5** AUDIO FREQUENCY SECTION

screws for each socket to provide a grounding-point for the circuitry associated with it. Pin No. 9 on each 12AT7 socket, and pin No. 7 on the 6V6 are connected to the ungrounded side of the 6.3-volt heater winding. Ground pins No. 4 and 5 on each 12AT7 socket, as well as the metal tube in the center. On the 6V6 socket, ground pins 1 and 2.

Work backwards from the 6V6 (Fig. 5). Mount the output transformer with 6-32 machine screws and nuts. Ground the common terminal on the output transformer secondary, and leave the other secondary terminal free.

When the 6V6 stage has been wired, connect the loudspeaker from ground through the send-receive switch to the free secondary terminal of the output transformer. Insert the 6V6 and the rectifier tube, plug in the line cord, and turn on the power. Set the send-receive switch to receive position. Both tubes should light or, if the 6V6 is metal, it should get slightly warm. A screwdriver tip touched to the control grid (pin #5) of the 6V6 should produce a characteristic clicky buzz in the loudspeaker.

When the 6V6 stage is operating, disconnect external wiring, remove tubes, and wire the 12AT7 stage that feeds the grid of the 6V6. Use 2- and 4-point insulated tie lugs as needed to support small parts firmly in place. After you've wired and checked this stage, put in tubes, reconnect speaker, and plug into the line. When all tubes are warm, carefully touch a screwdriver tip to the control grid lug (pin #7) of the 12AT7. A much louder clicky buzz should be heard.

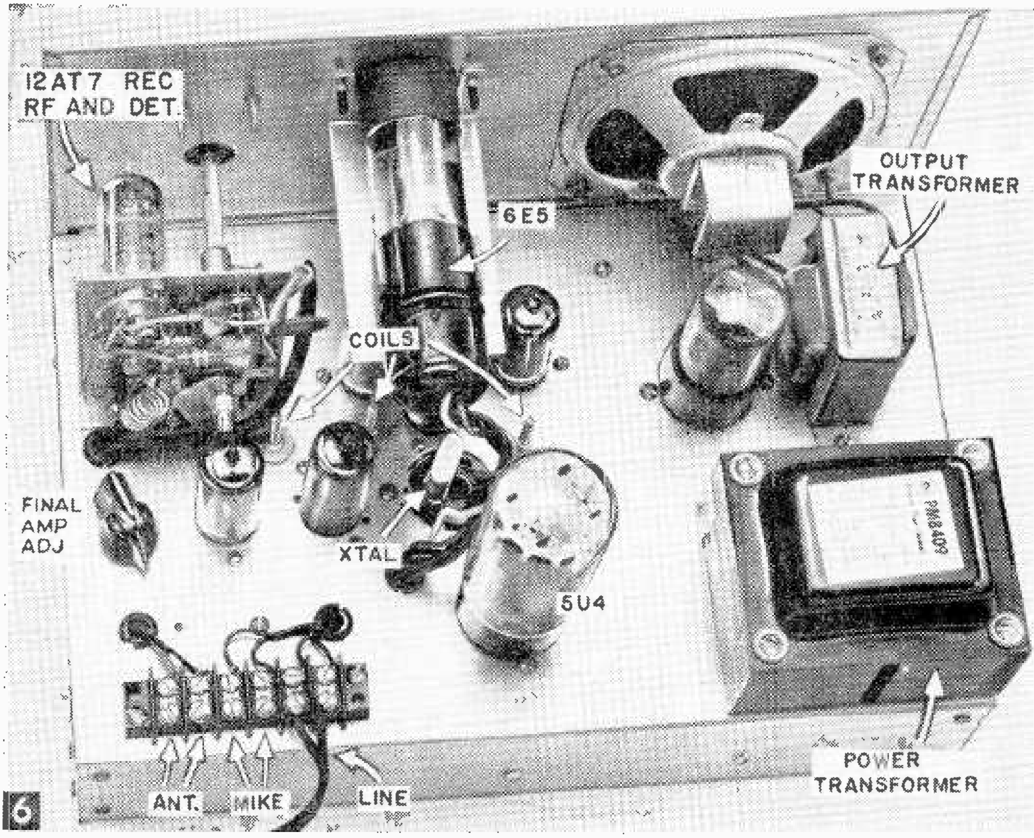
Install the non-shorting type send-receive switch (Fig. 6A and B), the MCW-voice switch, and the volume control potentiometer. Continue wiring by completing the 12AT7 amplifier stage that serves the receiver.

**To Test this Stage,** set up as previously described, throw the send-receive switch to receive, and check for the characteristic buzz at the grid. Advance the volume control. Because of the relatively high amplification here, it should be possible to hear a faint hiss of tube noise when the volume control is fully advanced.

Finish the audio section by wiring the 12AT7 grounded-grid microphone amplifier stage. This stage contains the MCW-voice switch, a SPST toggle switch, that converts the AF amplifier into an oscillating multivibrator for modulated CW radiotelegraphy. When the switch is open, the circuit acts as a tone generator. When the switch is closed, it becomes the microphone input stage.

Make external connections as previously described, and insert tubes. Connect a wire jumper across the mike-key terminals on the ungrounded secondary terminal of the output transformer to the ungrounded side of the loudspeaker. With the send-receive switch in send position and the toggle switch open, a loud, musical tone should issue from the loudspeaker. The volume control, since it is associated with the receiver only, has no effect upon the intensity of this tone.

Throw the toggle switch into the closed position. The tone should immediately cease. Now remove the jumper from the mike-key terminals and connect a good, single-button, telephone-type microphone in its place (see Materials List). Upon speaking into the microphone, the system should behave as a good, low-power public-address system. *Note: A crystal or dynamic mike will not work in this circuit.*




Top view showing physical layout of components.

The audio system so far constructed may serve as a good, code-practice oscillator for group instruction. Just connect a telegraph key to the mike-key terminals. If the signal is too loud for you, you can soften it by connecting a 100K volume control from pin #7 of the second 12AT7 to ground. Be sure the toggle switch is in the open position, and the send-receive switch is in the send position.

Disconnect temporary jumper lead, and wire speaker permanently into circuit before proceeding with receiver wiring.

**The Receiver Section.** Connect the 100K regeneration control potentiometer and 47K voltage-dropping resistor, along with the 100K detector plate load resistor (see Fig. 7). These parts are installed beneath the chassis, and secured by means of tie lugs.

Drill and assemble the receiver sub-unit (Figs. 8 and 9). Since this receiver operates at the extremely high frequency of about 145 million *cps*, short and direct leads are very important. This applies directly to grid, plate and bypass-capacitor leads. It is also important, wherever possible, to return all cathode and bypass capacitor leads to the same ground point for each stage.

The 15 mmfd variable tuning capacitor is too large to provide suitable bandspread for convenient operation. It is therefore advisable to carefully remove all but one stationary and one rotary plate. Be careful, when reassembling the variable capacitor, to see that the rotor and stator plates do not scrape or short-circuit against each other. After the receiver is in operation, you can often further improve the bandspread by spreading the capacitor plates cautiously apart and simultaneously readjusting the spacing of the coil.

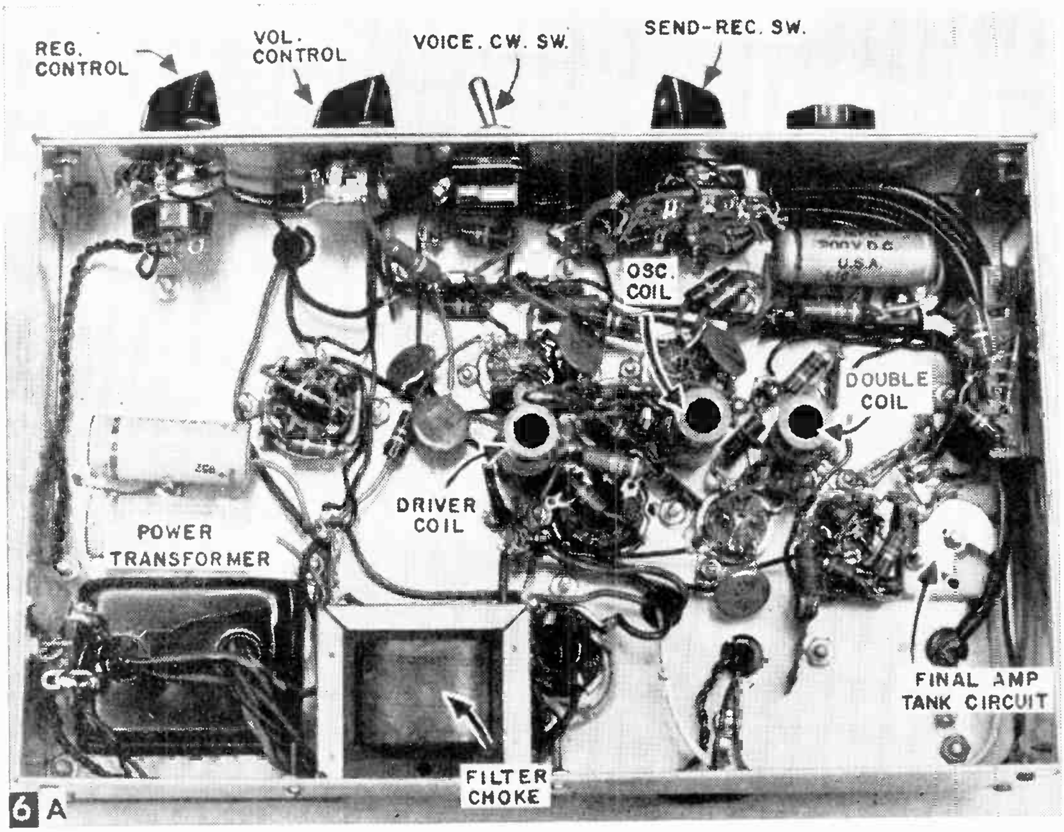
Wind and install coil L1 (see Fig. 7) carefully and complete as much of the sub-unit wiring as possible before mounting it on the

---

**Selecting a Crystal Frequency**

The crystal used in this transmitter is of the "overtone" type and oscillates at a frequency of approximately 36 *mc*. We have found adequate the crystals manufactured by Texas Crystal Corp., River Grove, Ill., which sell for about $5.

The crystal frequency in this transmitter is one quarter that of the output frequency, but you must choose your operating frequency in terms of the class license you hold. If you have a novice or technician class license, you have to confine your operations between 145 and 147 *mc*, and choose a crystal frequency between 36.25 and 36.75 *mc*. If you hold a general or extra class license, you can operate anywhere from 144 to 148 *mc*, and choose a crystal frequency from 36.00 to 37.00 *mc*.




6 A

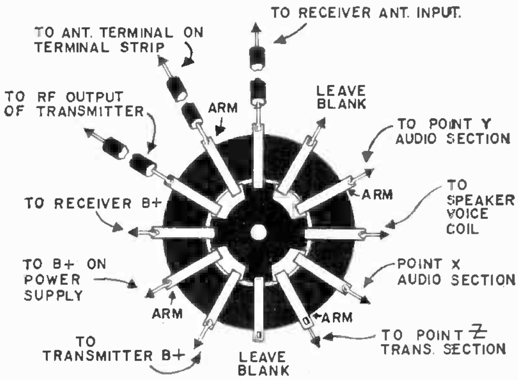
Bottom view of component layout.

chassis with 6-32 machine screws and nuts. Next, connect the heater, dc plate power, and signal output leads to the appropriate points under the chassis (Fig. 6A). Do not connect the antenna coaxial lead until later.

With the receiver wiring completed and checked, insert tubes and apply power. With send-receive switch in receive position, turn the volume control on full. Then slowly advance the regeneration control potentiometer. A smooth, loud hiss should be heard. This hiss indicates the occurrence of superregenerative action, the condition for maximum sensitivity of a receiver of this type. By varying the regeneration control, it should be possible to control smoothly the strength of the hiss. Also, superregeneration should be obtained throughout the capacitance range of the tuning capacitor.

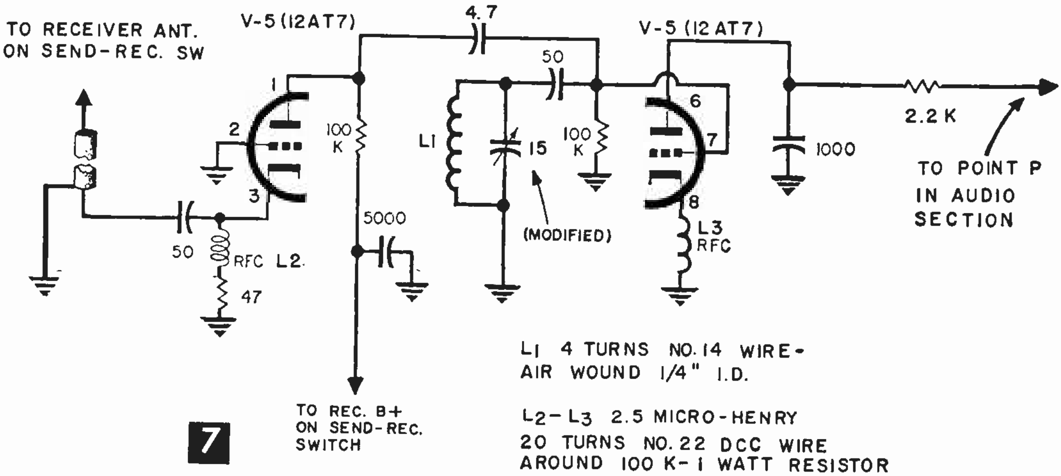
When the receiver superregenerates properly, check the tuning range with a grid-dip meter. It should completely include the two-meter amateur band, from 144 to 148 megacycles/second. A slightly wider tuning range is not unlikely, and can be adjusted by squeezing together or spreading apart the turns of coil L1.

If you live in or near a region of high




6 B BACK VIEW OF SEND-RECEIVE SWITCH

amateur activity, you should be able to hear two-meter amateurs on the air almost any evening by using a good antenna. In addition, police, taxicab dispatchers, and aircraft operating adjacent the amateur band may also often be heard. If you have not as yet installed a good two-meter antenna, a high, clear outdoor TV receiving antenna can be used to test the receiver. Install a knob temporarily on the receiver tuning capacitor shaft to aid in these preliminary tests. To




7

DETECTOR-RF AMPLIFIER ASSEMBLY

use your TV antenna, connect one side of the ribbon line to the antenna input tie point on the sub-unit, the other side to chassis.

**The Transmitter.** With the receiver in satisfactory working condition, begin the transmitter by wiring the crystal oscillator, and work forward (see Fig. 10). The crystal, which should have an operating frequency of approximately 36 *mc,* plugs into any two alternate pins of the 8-prong crystal socket. Other unused pins of the crystal socket make handy tie-points for various components. The crystal oscillator tube is the triode section of the 6AW8 tube. The only critical portion of this circuit is the coil, and this will cause no trouble if it is wound exactly as described in Fig. 10.

After wiring and checking the crystal oscillator stage, proceed with the frequency doubler, the pentode section of the 6AW8, paying careful attention to the coil. Be especially careful to avoid poor connections and solder-blob shorts between tube socket lugs and chassis. Support all small parts firmly by means of a liberal use of insulated tie lugs, and allow no parts to swing free or trouble is certain to follow. Keep all grid and plate leads short and direct, and return all grounds to the same point on the chassis, insofar as is possible.

With the 6AW8 circuitry complete and checked, wire in the 6CL6 driver stage, following the same precautions as outlined above. Remember, these circuits operate at a high frequency. Long, sloppy leads, or poorly-organized wiring cannot be tolerated. Wind the coil as described in Fig. 10, being careful to get the tap squarely in the electrical center of the coil. Make the RF choke, which connects from B+ to the coil tap by winding 100 turns of No. 26 cotton-covered magnet wire around the body of a 100K (or larger) 1-watt carbon resistor. "Scramble-wind" it, if you like, then dip in clean, clear lacquer to hold the turns in place.

When the 6CL6 driver stage is complete, wire the 12BH7 final amplifier stage. Similar precautions should be followed. Keep the leads in the plate circuit especially short and direct. This is vital. Wind the RF choke coil for this stage also around a 100K (or larger) 1-watt carbon resistor. However, only 25 turns of No. 26 cotton-covered wire are required. Wind these in a smooth layer, then

### Choosing an Antenna System

A suitable antenna system is very important to the effectiveness of any amateur station, and this is especially true in the VHF bands. Whereas a simple half-wave dipole in the attic will provide many contacts for the Puddle Jumper, a good, directional "beam" antenna, such as one of those suggested in the Materials List, will vastly improve it.

The height to which you raise your antenna will determine your range of VHF communcations, and you should put your antenna just as high above the ground as your pocketbook and local building codes will allow. By using a rotator, you will be able to point the antenna exactly at the station you want to contact. Any of the good TV rotors, will do, since the 2-meter beam is smaller than most TV antennas.

If your physical setup requires a feedline longer than 20 ft., be sure to use the larger RG-8/AU coaxial cable rather than the smaller RG-58/AU. The energy losses in the smaller cable are too great when used for long runs, most of the transmitter power is burned up before it gets to the antenna, and the receiving losses are equally great.

The following table compares the height of the antenna with the range of communications you can expect during day-to-day conditions. Occasionally, during especially fine propagation conditions called "band openings," it is possible to exceed these ranges from five to ten times.

| Antenna Height in Feet | Normal Range in Miles |
|---|---|
| 10 | 6 |
| 20 | 9 |
| 30 | 11 |
| 50 | 14 |
| 70 | 17 |
| 100 | 20 |

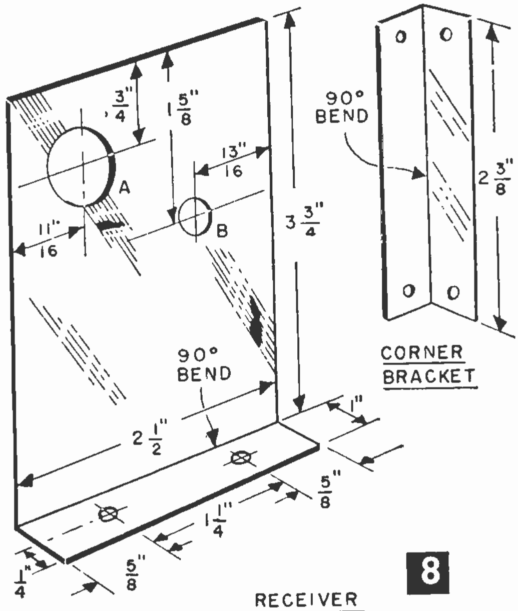
"dope" with clear lacquer to hold in place.

Do not connect the RF choke to the B+ connection (point E on send-receive switch) at this time. Otherwise, complete and check the wiring of all the transmitter RF stages, and insert all tubes in these stages. Do not apply power yet. Instead, get your grid-dip meter and, with this device in the oscillating condition, carefully adjust each of the coils as closely as possible to its proper resonant frequency. These frequencies are:

Crystal oscillator coil, about 40 *mc.*
Doubler coil, 72 *mc.*
Driver coil, 72 *mc.*
Final amplifier tank circuit, 145 *mc.* with capacitor about half-enmeshed.

The coil specifications given in Fig. 10 were found satisfactory in the writer's model. However, it may be necessary to add or subtract a turn or two from any coil. This is because stray circuit capacitances are unpredictable, and are bound to vary in individual cases. Be sure that the tubes are inserted at the time of these tests, as it is the capacitance of the tubes themselves which makes up the primary tuning capacitance of these circuits.

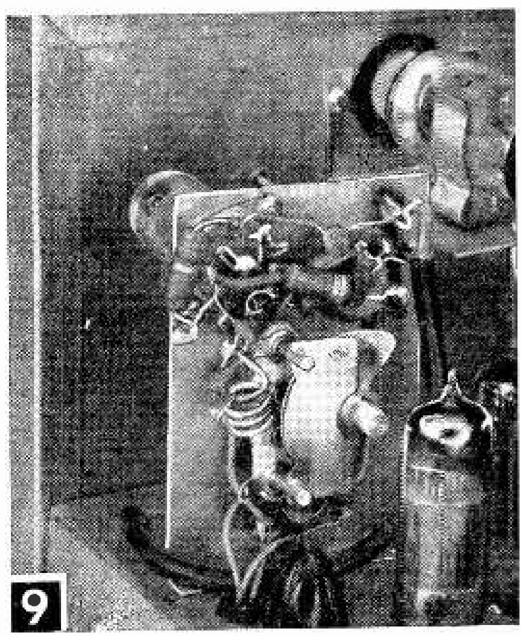
When all circuits have been thus approximately set to resonance, insert the crystal and rectifier tube, set send-receive switch to transmit, and apply power. Using the grid-dip meter in its wavemeter function, tune it



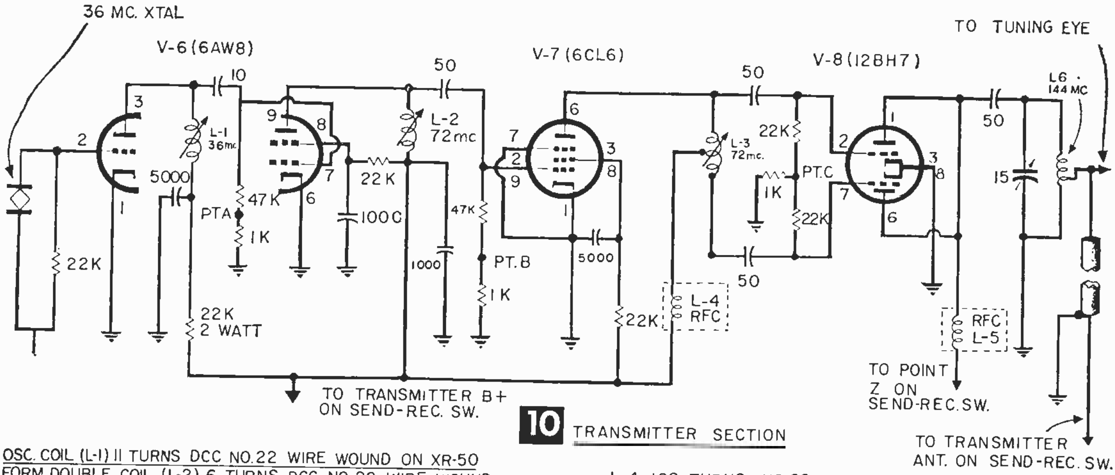

8
RECEIVER SUBASSEMBLY BRACKET

MATERIALS LIST—2-METER STATION

| No. Req. | Description |
|---|---|
| 1 | 5U4GB vacuum tube |
| 1 | 6AW8A vacuum tube |
| 1 | 6CL6 vacuum tube |
| 1 | 6E5 vacuum tube |
| 1 | 6V6 vacuum tube |
| 3 | 12AT7 vacuum tube |
| 1 | 12BH7 vacuum tube |
| 1 | 47 ohm, 1 watt resistor |
| 4 | 47K, 1 watt resistors |
| 4 | 220K, 1 watt resistors |
| 3 | 2.2K, 1 watt resistors |
| 11 | 100K, 1 watt resistors |
| 1 | 470K, 1 watt resistor |
| 1 | 390 ohm, 1 watt resistor |
| 5 | 22K, 1 watt resistors |
| 1 | 22K, 2 watt resistors |
| 3 | 1K, 1 watt resistors |
| 1 | .5 mfd, 200 WVDC paper capacitor |
| 9 | 5000 mmfd, 600 WV ceramic disk capacitors |
| 5 | 1000 mmfd, 600 WV ceramic disk capacitors |
| 6 | 50 mmfd, WV ceramic disk capacitors |
| 1 | 4.7 mmfd, 600 WV ceramic disk capacitor |
| 1 | 10 mmfd, 600 WV ceramic disk capacitor |
| 2 | 10 mfd, 450 WV electrolytic filter capacitor |
| 2 | 15 mmfd variable capacitors (Bud M-C 1850) |
| 2 | 100K linear taper potentiometers (one with switch) |
| 1 | 2½ x 7 x 11" chassis (18 ga. aluminum) |
| 1 | 7⅜ x 11⅜" front panel (18 ga. aluminum) |
| 1 | 2½ x 3¾" subassembly (18 ga. aluminum) |
| 1 | National type BM dial |
| 1 | tuning eye assemble for 6E5 tube (Amphenol 58 MEA 6) |
| 1 | 4" PM loudspeaker |
| 3 | plastic octal tube sockets |
| 6 | 9-pin miniature sockets, high frequency plastic insulation |
| 1 | 6-terminal barrier terminal strip (Cinch-Jones) |
| 1 | SPST toggle switch |
| 1 | 4PDT non-shorting wafer switch (Centralab 1409) |
| 1 | power transformer (Chicago-Standard PM-8408) |
| 1 | filter choke (Chicago-Standard C-1708) |
| 1 | output transformer (Chicago-Standard A-3823) |
| 3 | National XR-50 coil forms with iron slugs |
| 1 | ¼ to ¼" brass coupling |
| 1 | #48 lamp (for tuning) |
| 1 | 1N34 crystal diode |
| 1 | "Overtone" crystal 36.25-36.75 *mc*, available from Texas Crystal Co., River Grove, Ill. (see box copy) |
| 1 | line cord and plug |
| 1 | ¼ x 3" plastic rod |
| 1 | type F-1 carbon microphone (Telephone Engineering Co., Simpson, Pa.) |
| 1 | telegraph key (Johnson 114-100) |
| 1 | 144 *mc* directional antenna (see box copy) (Hy-Gain, type 210, ten element 144 *mc* antenna, Newark Electronics #92-F-482) (Telrex, six element 144 *mc* beam antenna, Allied Radio #92-CZ-273) |
| 3 | knobs for ¼" shaft |
| Misc. | screws, nuts, tie points, #20 plastic insulated hookup wire, rosin core solder |



9
**Detector-RF amplifier**




**10** TRANSMITTER SECTION

OSC. COIL (L-1) 11 TURNS DCC NO.22 WIRE WOUND ON XR-50 FORM DOUBLE COIL (L-2) 6 TURNS DCC NO 22 WIRE WOUND ON XR-50 FORM DRIVER COIL (L-3) 6 TURNS DCC NO 22 WIRE WOUND ON XR-50 FORM. CENTER TAPPED. FINAL AMPLIFIER COIL (L-6) 3 TURNS NO.14 TINNED COPPER WIRE TAPPED ONE TURN FROM GROUND END.

L-4 100 TURNS NO.22 WIRE WOUND AROUND A 100K- 1 WATT RESISTOR

L-5 20 TURNS NO 22 DCC WIRE WOUND AROUND A 100K-1 WATT RESISTOR.

to 36 *mc*, and bring it near the crystal oscillator coil. Immediately adjust the crystal oscillator coil slug to maximum output, then back-off by unscrewing the slug upwards for about three whole turns. This is for stability. Then tune the grid-dip meter to 72 *mc*, and adjust the doubler coil slug to maximum output. Connect the negative side of a 10-volt dc voltmeter to point B (Fig. 10), and ground the positive side to chassis. Adjust the doubler coil slug to give maximum voltage reading. The voltage here should be at least 1 volt, but more is desirable.

Then connect the voltmeter to point C and adjust the doubler coil slug until maximum reading is obtained. Again, readings between 1 and 3 volts are acceptable, the higher the better. It is also a good idea to make sure by means of the grid-dip meter that this stage is producing its output on 72 *mc*.

When you are satisfied that this is indeed the case, shut off the power temporarily, and complete the connection between the RF choke coil in the 12BH7 final amplifier plate and point E on the send-receive switch. Then

### The Superregenerative Receiver

Perhaps no other type of receiver provides as much VHF reception per tube and dollar invested as the superregenerative. Even though simple to construct, it enables you to realize as much sensitivity with one or two tubes as is ordinarily obtained with seven or more. But such sensitivity is obtained at a price. You must tune carefully for the signals, particularly the weaker ones; they do not roll in at the touch of the dial. In addition, the superregenerative receiver is somewhat susceptible to overloading by strong, local signals, and is not as selective as a good superheterodyne.

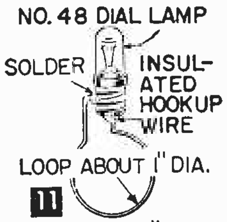
We have employed a superregenerative receiver in this unit simply because a superheterodyne of comparable performance would raise the cost and building complexity beyond that which is reasonable for the purposes of this project. This is a good little receiver, and we have no apologies to offer for its performance.

tune the grid-dip meter to 145 *mc*, and reapply power to the transmitter. A definite indication of strong RF power output on this frequency should be evidenced when the final amplifier tuning capacitor is readjusted. If it is not, shut off power immediately and reexamine wiring. When a definite sign of RF output at 145 *mc* is obtained from the 12BH7 plate circuit, a "soup-loop" (a #48 or #49 pink bead pilot lamp bulb connected to a loop of wire 1 in. in diameter as in Fig. 11) should glow very brightly when coupled to the final amplifier plate coil. If it does, then the RF circuitry is probably in good shape.

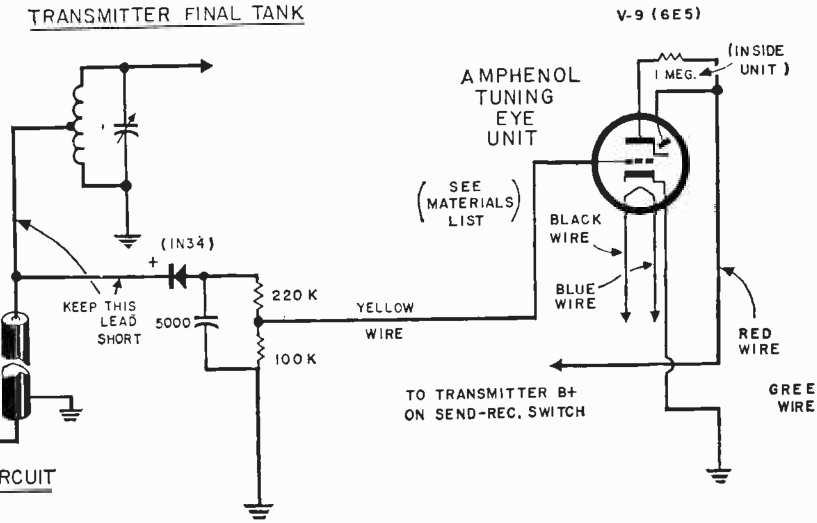
Make a final check for stability and freedom from self-oscillation as follows: Hang the soup-loop in the final amplifier plate coil. Adjust all coils and the tuning capacitor for maximum output. Then very briefly pull out the crystal. All output should cease. (Immediately reinsert crystal to avoid damage to tubes or circuitry.) If output does not cease when the crystal is removed, then you will probably have to redress wiring and move parts around until this condition occurs, or trouble with the F.C.C. is imminent.

To check the transmitter for modulation, connect a carbon mike to the appropriate terminals, apply power, and switch to transmit position. Hang the soup-loop around the final amplifier plate coil and tune for maximum output. Then talk into the microphone. As you speak, the soup-loop bulb should flicker noticeably. If you have another 2-meter receiver handy, tune in the signal. The speech quality should be clear, crisp, and strong.

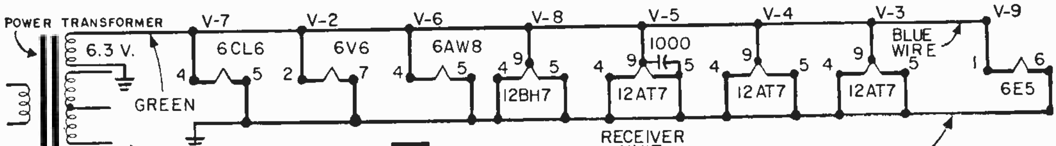
**Finishing Touches.** With both the receiver and transmitter operating satisfactorily, it is time to apply the finishing touches. Pull out all tubes and remove all external connections




**11** "SOUP LOOP" (LAMP FOR TUNING TRANSMITTER)




**12** TUNING-EYE CIRCUIT




**13** HEATER CIRCUIT

to prevent damage. Wire the tuning-eye rectifier circuit, keeping the lead to the final amplifier coil tap short, less than 1 in. long. Connect all coaxial cables from the receiver and transmitter to the send-receive switch, and from the switch to the appropriate terminals upon the Jones terminal strip using type RG-58/AU coaxial cable, and grounding the outer shield. Mount the tuning-eye tube bracket upon the panel, and connect the socket leads appropriately (Figs. 6 and 12). These leads should be brought through a grommeted hole in the chassis floor.

The output from the transmitter is taken from a tap on the final amplifier output coil. This tap should be made one turn from the ground end of the coil. The tuning-eye rectifier circuit also connects to this point. If the tuning-eye tries to open instead of close, when the transmitter is energized, reverse the 1N34 crystal diode.

Mount the National vernier dial on the panel, and couple it to the receiver tuning capacitor through a length of ¼-in. dia. plastic rod and a ¼-in. to ¼-in. shaft coupling. The dial should read zero when the plates of the receiver capacitor are completely enmeshed. Tighten all set screws firmly. Then put knobs on both potentiometer shafts (cutting these to proper length if necessary) and on the send-receive switch shaft. This should complete the assembly.

Connect the power cord and microphone to the proper terminals. Then connect a 2-watt 47-ohm carbon resistor to the antenna terminals. Apply power, and switch into transmit position. Adjust the final amplifier tuning capacitor until the tuning-eye closes. Then speak into the microphone. The shadow within the tuning-eye should flicker noticeably, indicating satisfactory modulation, and a check with a local receiver should reveal good, clean speech quality. Also, after a few minutes, the 47-ohm resistor across the antenna terminals should get noticeably warm, indicating satisfactory power output..

Now, remove the 47-ohm resistor, and connect a 144-*mc* antenna system, preferably a good, high directional "beam" antenna as recommended. Make sure that the outer shield of the coax cable goes to the grounded terminal on the strip. Throw the send-receive switch to receive, and adjust the regeneration control for a smooth hiss. If there are any 2-meter stations operating within your vicinity, you should have no difficulty in hearing them. Throw the switch to transmit, adjust the final amplifier tuning capacitor for maximum closing of the eye, and you're tuned-up and ready to go.

Novice amateurs, learning the code, may wish to operate in the modulated code, MCW mode, which is legal on the 2-meter band. To do this, replace the microphone with a telegraph key and snap the toggle switch to the MCW (open) position. Otherwise, operation is identical to that on voice. The smooth, tone-modulated code signal radiated can be read by any other 2-meter amateur, regardless of the kind of receiver employed.

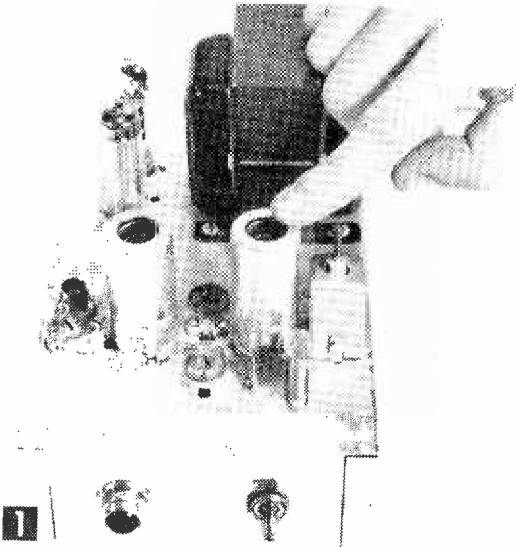
# Improved Crystal Control for Amateur Communications

By EDWIN E. STEINBERG, W9QJO

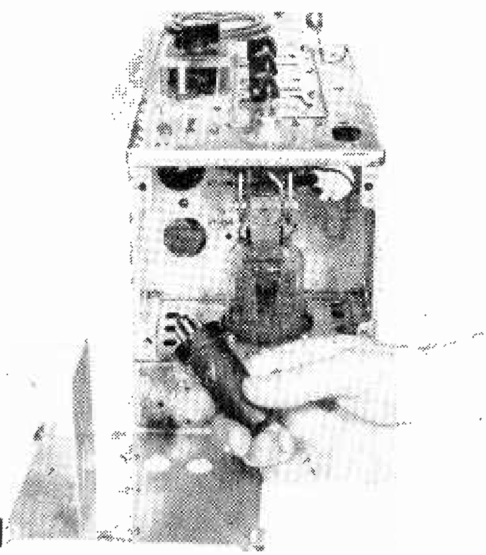
PORTABLE transmitters, net operation, and broadband receiver converters are just a few of the many circuit applications best filled by a crystal-controlled oscillator. This unit and a variable-frequency oscillator (VFO) team harmoniously for use in heterodyne-type transmitter exciters and single-sideband (SSB) generators.

Most crystal oscillator circuits in common use have a somewhat restricted application in choice of tube type and/or mode of operation. The oscillator applications shown in Figs. 1 and 2 feature both excellence of performance and versatility of application.

**Circuit Details.** The Tri-Tet and modified Pierce circuits are typical of those commonly used. The Tri-Tet (Fig. 3) was originally designed for use with tetrode tubes. While it will work with pentode tube types, it does not use them to their full advantage. Those pentode types with an internal connection between suppressor and cathode are not suitable for the Tri-Tet circuit. In addition, the cathode circuit impedance (L1 and C1) of a Tri-Tet oscillator is common to both the oscillator and amplifier sections of the circuit and prevents good load isolation.



1 VHF receiver converter using the improved oscillator.



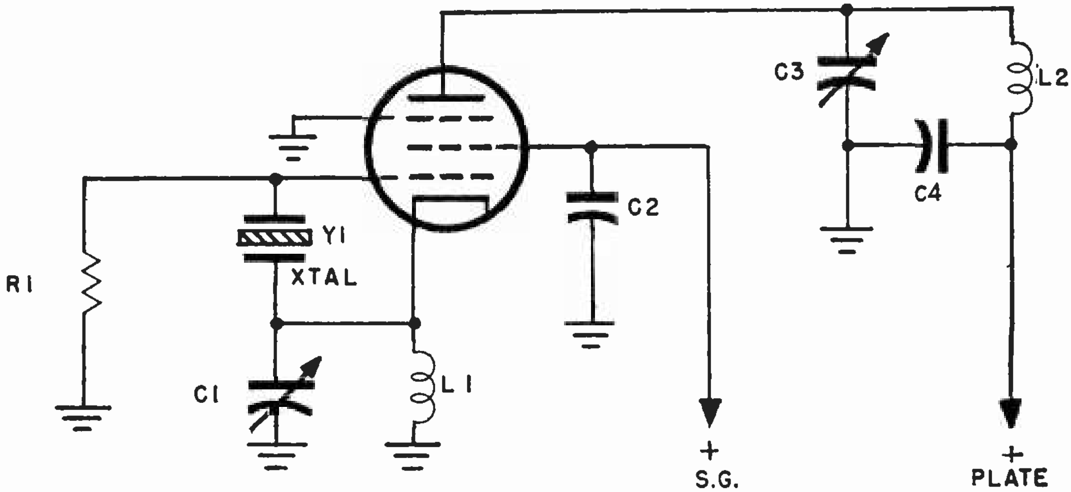
2 New 6AG7 oscillator in modified BC-625 transmitter.

The modified Pierce oscillator circuit (Fig. 4) was designed for pentode tube applications. Since the cathode is grounded, any pentode tube-type or pentode-tube section can conceivably be used in an electron-coupled Pierce oscillator. Reasonably good load isolation will be achieved. However, the circuit is not suitable for overtone operation. As in the Tri-Tet applications, both crystal terminals are above ground. This is an added complication if crystal switching is required.

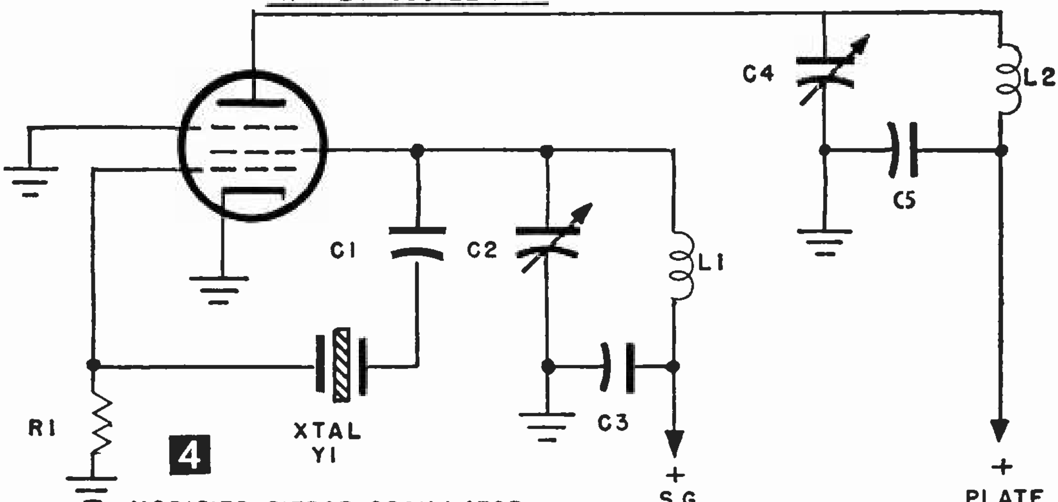
**What Circuit Can Best Be Used?** While the modified Miller circuit in Fig. 5 was designed for use in a crystal-controlled receiver converter, its basic design can be applied to a wide variety of circuit applications. Tube type and component values need only be chosen for the specific application.

The circuit is an electron-coupled form of Miller oscillator. Similar to the Tri-Tet, it differs in that a grounded-cathode form of Miller oscillator was used rather than a grounded-plate arrangement. It is intended strictly for modern pentode tube types or pentode tube sections. Since the suppressor and cathode are both grounded, many tube types are suitable for this circuit which are not satisfactory for the Tri-Tet.

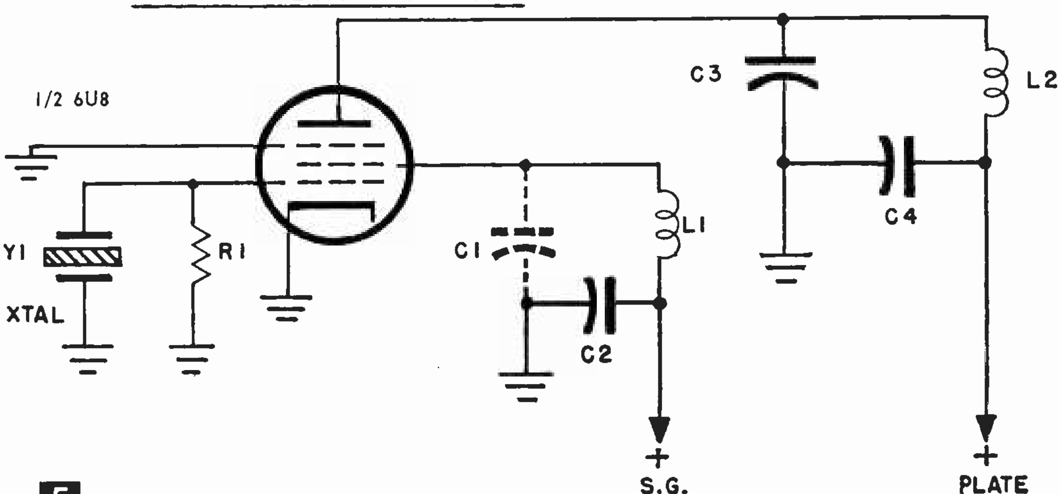
Its basic crystal oscillator section can be employed for either fundamental or overtone



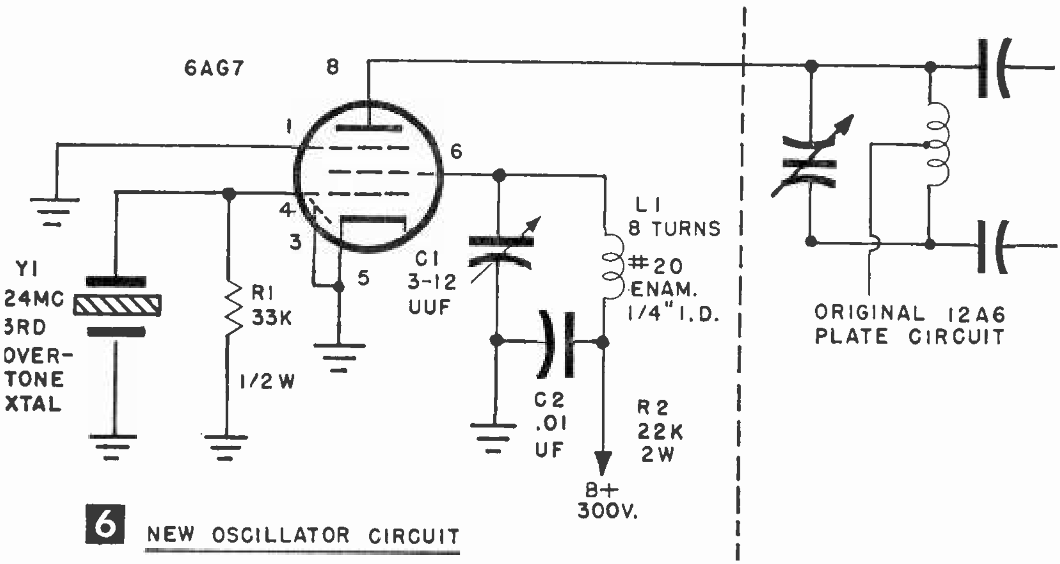

3 TRI-TET OSCILLATOR



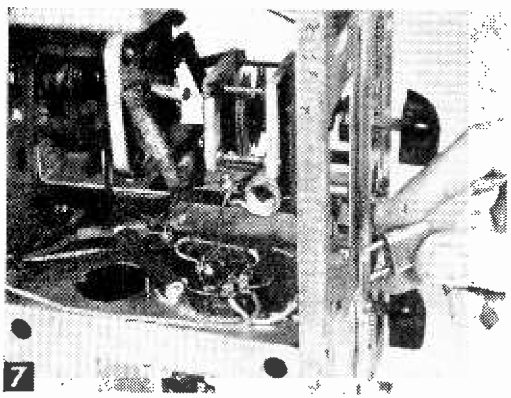

4 MODIFIED-PIERCE OSCILLATOR



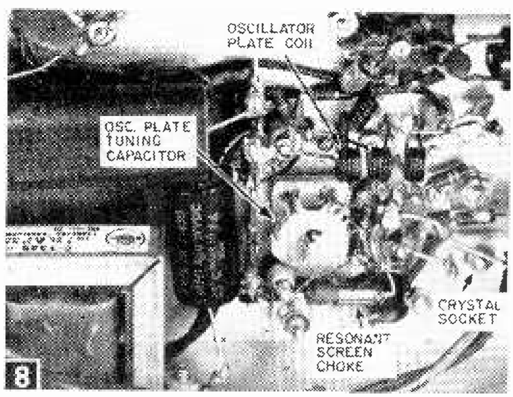

5 MODIFIED-MILLER OSCILLATOR




6 NEW OSCILLATOR CIRCUIT



7 6AG7 transmitter-oscillator construction.




8 Receiver-converter oscillator construction.

mode of operation. The electron-coupled plate section can be used as an amplifier or multiplier. The grounded-cathode circuit, plus shielding provided by the suppressor-grid, ensures excellent load selection. Drift caused by temperature effects is reduced by the use of the minimum required crystal drive for adequate output.

The circuit is currently in use as a fifth-overtone oscillator and doubler, and provides 130 *mc* oscillator injection for a 2-meter broadband receiver converter, as featured in "VHF Converter for Short Wave or Communications Receivers" (Fig. 1), cover story in RADIO-TV EXPERIMENTER No. 595 (available for $1, including mailing and handling charges, SCIENCE and MECHANICS, 505 Park Ave., New York 22).

The circuit is also in use as a third-overtone oscillator (Fig. 2), and doubler using a 6AG7 tube to replace the 12A6 multiplier in a BC-625 transmitter (part of the SCR-522). All the original plate circuit components are used. The tube socket must be completely rewired (Fig. 7). Note that the original 6G6G oscillator circuit is entirely removed.

**Construction Suggestions.** The usual precautions for layout and lead dress must be observed in the construction of this or any other oscillator (Fig. 8).

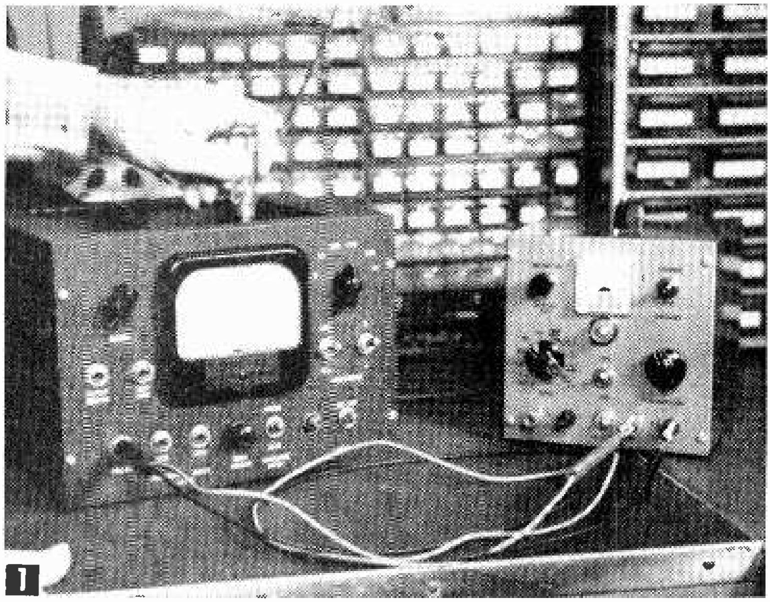
Mechanical stability is required as in Fig. 8 in order to achieve optimum frequency stability. Use of a crystal for frequency control is *not* a cure-all and cannot replace good design and careful construction.

**Adjustment and Operation.** This oscillator requires no new tricks of adjustment or operation. The screen is tuned somewhat above the desired crystal (fundamental or overtone) frequency. (Crystal drive increases as exact screen circuit resonance is approached.) Tune the plate tank like you would any amplifier or multiplier and let the circuit do the rest.

# AC-DC Voltage Standard

**Simply built unit provides highly accurate ac or dc voltages or currents for the calibration of test equipment**

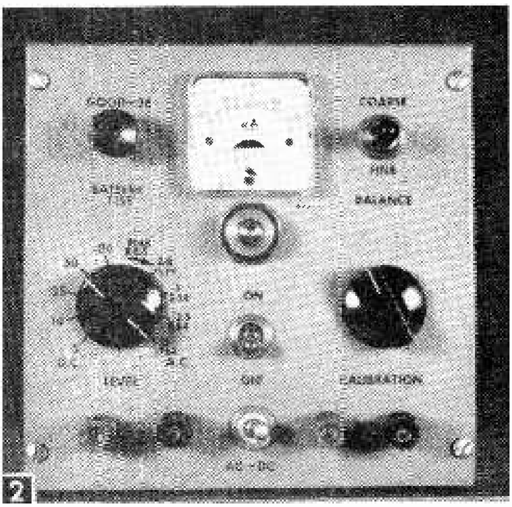
By W. F. GEPHART



1

Calibrating a VTVM in home-built test equipment with the voltage standard.

A MAJOR problem in the building of certain test equipment resides in the calibration of the finished unit, and the ac-dc voltage standard in Fig. 2 is designed to supply a calibration source with 99% accuracy.



2

Notice on the front panel the peak and rms dual calibrations of the ac voltages.

The unit consists of a simple, regulated dc source of five convenient voltages. It can be built for about $35 using standard parts, and for less than $30 if surplus parts are used.

**Calibration Unit Difficulties.** In many such units, voltages are furnished by a resistor network as shown in Fig. 3A. The standing current in the network is 10 *ma*, and the voltages are accurate only if virtually no external current is drawn.

Suppose, for example, a device drawing 1 *ma* were connected to the 50-volt tap. This would increase the current being drawn through R1 and R2 to 11 *ma*, causing a voltage drop of 60.5 volts across them. Since the supply voltage is held constant at 105 volts, the voltage at the 50-volt tap would then be 105 minus 60.5 (the drop across R1 and R2), or 44.5 volts.

This problem could be solved by using a variable resistor, instead of the network, as shown in Fig. 3B. Then the resistance could be varied to maintain the desired voltage as the load changed. But some means would have to be devised to know where to set the resistance.

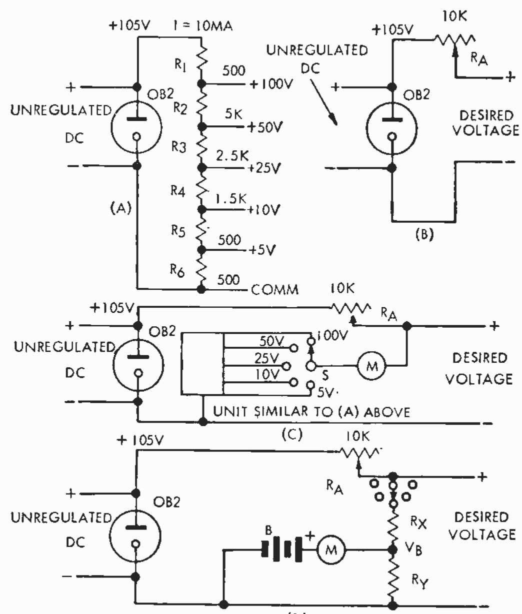
This could be done as shown in Fig. 3C. An accurate unit (under no load conditions), such as in Fig. 3A, would be connected to one side of a meter, and the variable voltage connected to the other side. When the two voltages are equal, no current would flow through the meter, which would then indicate the proper setting of the variable resistance. But this would be expensive.

Mercury batteries could be substituted for the fixed voltage. They are excellent voltage standards since their output voltage does not change appreciably during their useful life. However, getting enough mercury batteries to give the variety and range of voltages desired would also be expensive.

**The Solution to the Problem** is shown in Fig. 3D. Here, a single mercury battery, with a voltage of Vb is used, and two resistors (Rx and Ry) are connected across the variable voltage. The ratio of these resistors is such that, when one of the desired voltages (such as 100 volts) is placed across them, the voltage drop across Ry is exactly equal to the battery voltage. When Ra is then set at 100 volts, for example, the meter will read zero since the voltages on each side of it are equal.

It can be seen that, by using several sets of such proportioned resistors, the voltage across the bottom one could always be equal to the battery voltage, even with different supply voltages.

In the actual circuit (Fig. 2), two variable resistances (R5 and R6) and several fixed resistors (R7 through R11) are used in place of Ra shown in Fig. 3D. This gives more precise control for the various voltages within the external current capacity of 6 *ma* than a single resistor would. Separate resistors (R12 through R16) are used for Rx for each range,



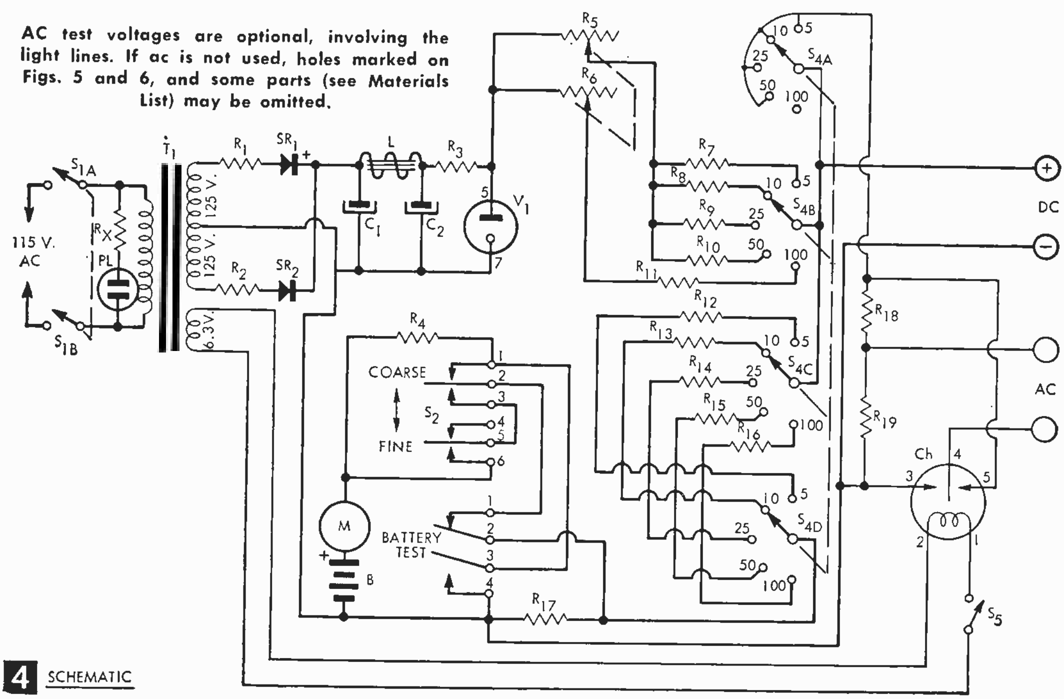

**3**

each proportioned to a single resistor (R17), which acts as Ry for all ranges.

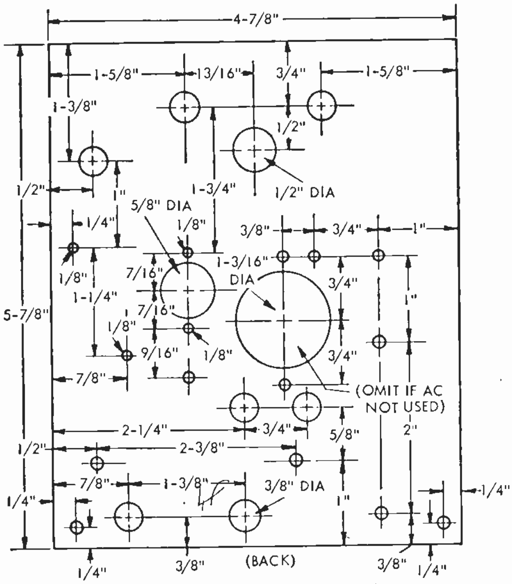
The OB2 regulator tube was selected because ratings show this tube output to be within one volt of rating, which is better than 99% accuracy. Accuracy is also maintained with at least 1% resistors for R12 through R19.

While a zero-center meter was used in this unit, a regular meter can be used if the needle

**AC test voltages are optional, involving the light lines. If ac is not used, holes marked on Figs. 5 and 6, and some parts (see Materials List) may be omitted.**

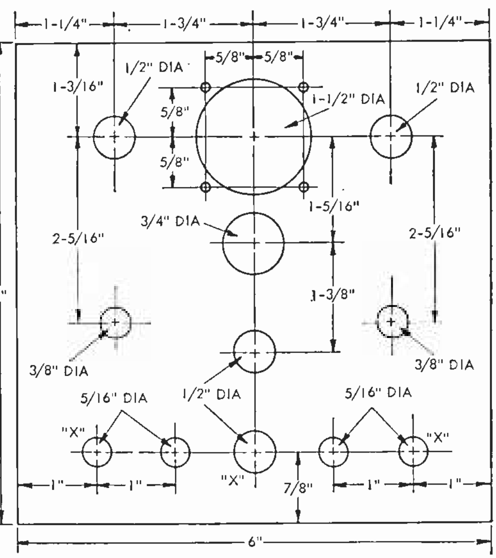



**4** SCHEMATIC




ALL GROMMET HOLES 5/16" EXCEPT WHERE MARKED
ALL SCREW HOLES 9/64" EXCEPT WHERE MARKED

**5** CHASSIS LAYOUT



OMIT HOLES MARKED "X" IF AC NOT USED

**6** FRONT PANEL LAYOUT

is set above the zero mark (with the zero adjustment), and this point marked as the "no-current" or null point. A zero-center meter is preferred, however, because of the off-null voltages involved.

The sensitivity of the meter is of little importance. The average 0-1 *ma* meter will indicate an unbalance of .002 volt. Because of the maximum unbalanced voltages, a "coarse-fine" switch (S2) places a voltage-dropping resistor (R4) in the meter circuit in the

MATERIALS LIST—AC-DC VOLTAGE STANDARD

| Desig. | Description |
|---|---|
| RX | 56,000 ohm, ½ watt, 10% carbon resistor (if not included in PL) |
| R1, R2 | 27 ohm, ½ watt, 10% carbon resistor |
| R3 | 5000 ohm, 5 watt carbon resistor |
| R4 | 120,000 ohm, ½ watt, 1% (Aerovox Carbofilm, see text) |
| R5 | 15,000 ohm, 4 watt, wirewound pctentiometer (IRC-WPK-15000) |
| R6 | 500 ohm, 4 watt, wire wound rear section (IRC-WM-500) |
| R7 | 10,000 ohm, 1 watt, 5% carbon resistor |
| R8 | 9100 ohm, 1 watt, 10% carbon resistor |
| R9 | 5600 ohm, 1 watt, 5% carbon resistor |
| R10 | 3900 ohm, ½ watt, 5% carbon resistor |
| R11 | 1200 ohm, ½ watt, 5% carbon resistor |
| R12 | 200 ohm, ½ watt, 1% (Aerovox Carbofilm) |
| R13 | 1450 ohm, ½ watt, 1% (200 plus 1250 ohm Aerovox Carbofilm) |
| R14 | 5200 ohm, ½ watt, 1% (200 plus 5000 ohm Aerovox Carbofilm) |
| R15 | 11,450 ohm, ½ watt, 1% (450 plus 11K Aerovox Carbofilm) |
| R16 | 24,000 ohm, ½ watt, 1% (Aerovox Carbofilm) |
| R17 | 1050 ohm, ½ watt, 1% (500 plus 550 ohm Aerovox Carbofilm) |
| C1, C2 | 30 mfd, 150 volt electrolytic capacitors (Sprague 1412) |
| S1 | DPST toggle switch |
| S2 | DP 3 position lever switch (Switchcraft 3037L) |
| S3 | 2 ckt. push button (H&H 3392A or Spemco 1158) |
| S4 | 4P 5 position rotary switch (Centralab PA-1013) |
| T1 | 250 volt, CT 25 ma, power transformer (Stancor PS-8416) |
| L | 12 h, 30 ma choke (Stancor C-2318) |
| SR1, SR2 | 65 ma selenium rectifiers |
| M1 | 1 ma or less meter (see text)* |
| B | 4.2 volt mercury battery (Mallory TR-133) |
| V1 | OB2 regulator tube |
| PL | neon 51 bulb and holder |
| Misc. | 6 x 6 x 6-in. aluminum cabinet (Bud AU-1039HG), 2 knobs, 2 or 4 binding posts, hardware |
| | Additional Parts Required if AC Used |
| R18, R19 | 50,000 ohm, ½ watt, 1% resistors (Aerovox Carbofilm) |
| S5 | SPST toggle switch |
| Ch | chopper (see text; typical units are Collins Electronic model IC-252, or Airpax 175) |

* miniature tuning meter, 0-20-0 microamp, #R94-L108, available from Radio Shack Corp., 730 Commonwealth Ave., Boston 17, could be used

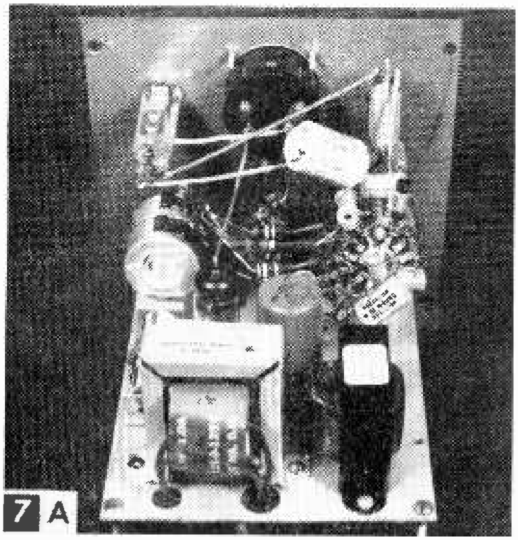
Surplus precision resistors available from "TAB," 111 Liberty St., New York 6, or Rock Distributing Co., 902 Crown Rd., Rochester 10, N. Y.

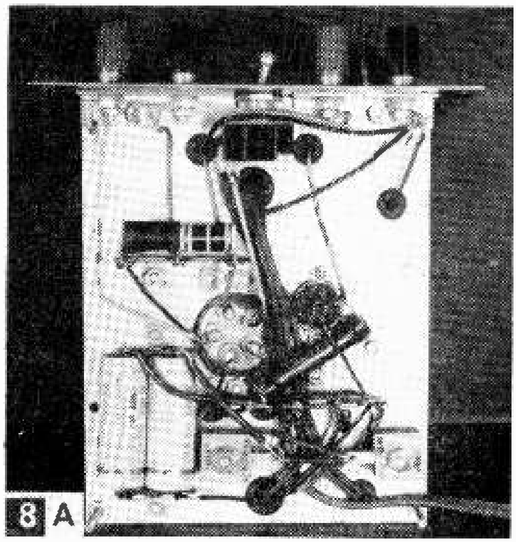
"coarse" position. With the meter shown, a Calrad (Japanese) 50-0-50 microamp, R4 is 120,000 ohms, which permits a full-scale deflection of 6 volts.

A push-button (S3) connects the battery across the meter through R4 to check battery condition. If the meter does not indicate proper value (36 in this case; representing 4.2 volts on the 6-volt f.s. deflection), the battery should be replaced.

**AC Voltages** are obtained by changing the precise dc voltages to ac with a chopper. This is a vibrator-like device which reverses the polarity of the dc by coil-energized contacts. Many such units are available in surplus stocks, or may be ordered by parts distributors. Any type with a 6-volt, 60-cycle coil and reasonable contact rating will do. The one used here has a contact rating of 1 *ma* at 1 volt, but works adequately up to about 25 volts. For this reason, only the four lowest voltages are available in ac.

**The DC Voltage** is split by R18 and R19, giving full-wave ac voltage which is half of the dc. The output is a square wave, which means




that the peak, average, and *rms* (root mean square) values are identical. Since most voltmeters are calibrated for *rms* values, the ac scale is calibrated for two values for each position. One is the peak (or actual) voltage, and the other is the *rms* value, which is .707 of peak. In calibrating most meters, refer to the *rms* value of the calibration. Also keep in mind that the *peak* values are *half* of the *peak-to-peak* values used on some meters and oscilloscopes.

**Cabinet and Construction.** Since regulator tubes are affected by light, the unit should be enclosed in a cabinet for greatest accuracy. If a minature meter is used, the 6x6x6-in. cabinet will suffice. If a larger meter is used, additional panel space will be required, although the chassis can be the same size.

Fasten the chassis to the front panel by the binding posts (and S5 is ac is used). Wire the power supply first. Due to the close spacing on the chassis, care should be taken in substituting for the parts shown. The knob on switch S4 has been made "double-ended" (when ac is used) by scratching a line at the back of the knob, opposite the regular line, and filling it with white paint.

**To Use the Unit,** first turn the "Calibration" control (R5-R6) fully counter-clockwise. Connect the device to be checked to the binding posts (ac or dc), and set switch S5 accordingly. Set the "Output" control (S4) to the desired voltage, and turn the unit on. Set "Balance" switch to "Coarse" and adjust "Calibration" control to zero current on the meter. Then reset the "Balance" control to "Fine," and readjust the "Calibration" control. When the meter again indicates zero current, the exact voltage is at the output terminals.

The unit can also be used as a current standard with a few precision resistors. By Ohm's law, exactly 1 *ma* of current will flow through exactly 100,000 ohms when it is connected across exactly 100 volts. By connecting a 0-1 *ma* meter in series with this resistor, you can check the accuracy of the meter, since essentially 1 *ma* of current will flow—"essentially," because the internal resistance of the meter is added to the circuit. But since such meters usually have a resistance of 100 ohms or less, the error is .001% or less.

The chart below shows currents available with various voltages and two accurate, precision resistors.

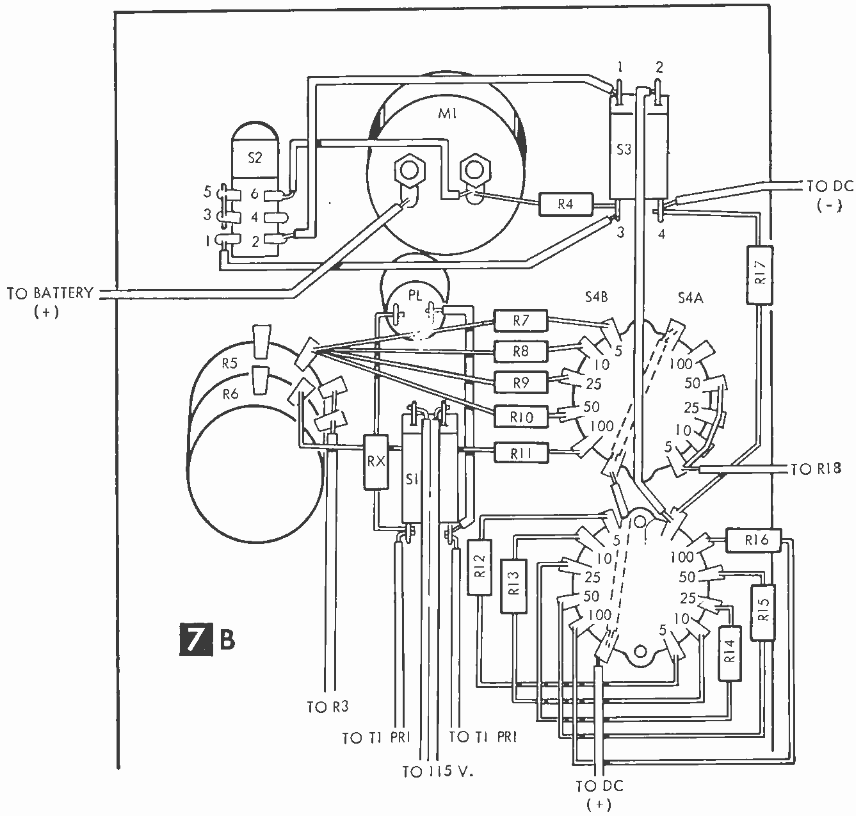
CURRENT WITH EXTERNAL RESISTANCE OF

| Voltage | 100,000 ohms | 20,000 ohms |
|---|---|---|
| 100 | 1 milliamp | 5 milliamp |
| 50 | 500 microamp | 2.5 milliamp |
| 25 | 250 microamp | 1.25 milliamp |
| 10 | 100 microamp | 500 microamp |
| 5 | 50 microamp | 250 microamp |

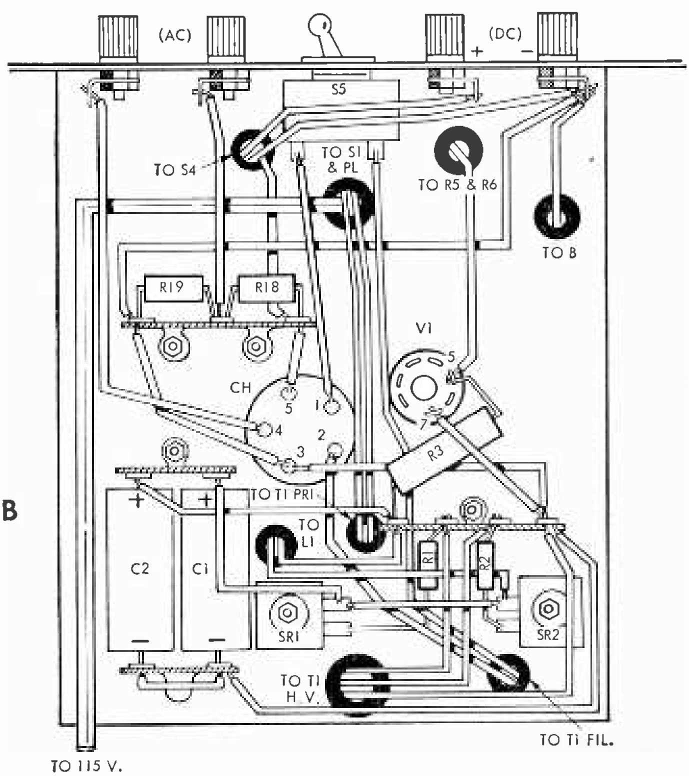
With these two resistors, accurate currents from 5 microamps to 5 *ma* can be obtained, all within the 6 *ma* current limit of the unit.

**Determining Meter Movement.** This source of accurate current also permits making current shunts for meters, or determining the basic movement of meters.

Assume, for example, that you wanted to make a 0-5 *ma* meter out of a 0-1 *ma* basic movement. Connect the meter in series with the 100,000-ohm precision resistor, and set the unit to 100-volt output. Cut a very short length of resistance wire across the meter terminals, turn the unit on (balancing it to the null), and adjust the length of the wire until the external meter reads 20% full scale. For final accuracy, change to the 20,000-ohm resistor, and make final adjustment of wire length until the external meter reads full scale, or exactly 5 *ma*.


1
2
M1
S3
S2
5
6
3
4
1
2
R4
TO DC
(-)
3
4
R17
TO BATTERY
(+)
PL
S4B
S4A
R7
R8
R9
R10
R11
R5
R6
RX
S1
5
10
25
50
100
100
50
25
10
5
TO R18
R16
R12
R13
R15
R14
TO R3
TO T1 PRI
TO T1 PRI
TO 115 V.
TO DC
(+)

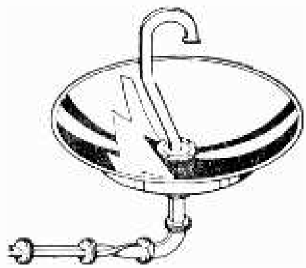
7B


(AC)
(DC)
+
-
S5
TO S4
TO S1
& PL
TO R5 & R6
TO B
R19
R18
V1
5
CH
1
5
4
2
3
7
R3
+
+
TO T1 PRI
TO
L1
C2
C1
R1
R2
SR1
SR2
TO T1
H.V.
TO T1 FIL.
TO 115 V.

8B

# What Is This Thing Called Wavelength?

By C. F. ROCKEY



1

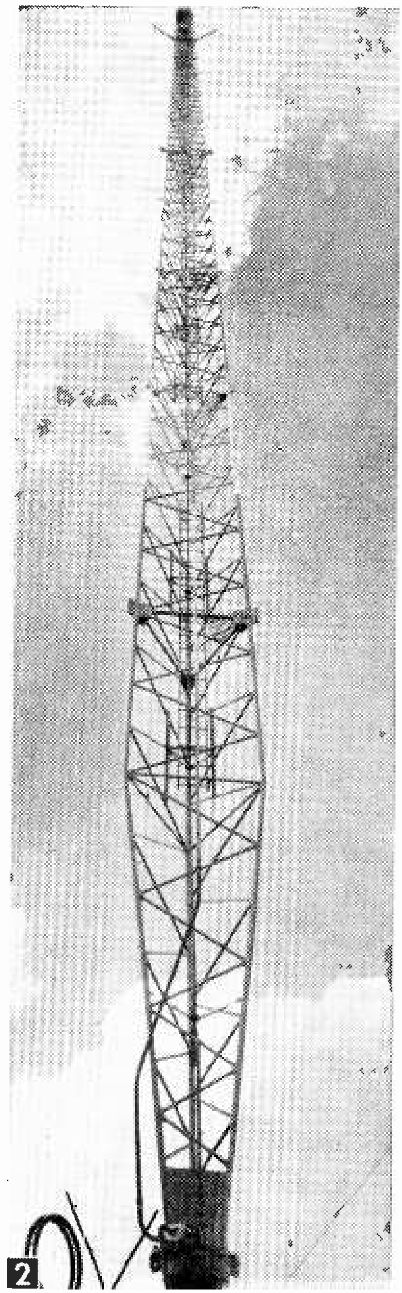
THE idea of the invariable unit of length is a very handy one and applies widely throughout the physical world. Yet its use often brings problems. A mouse can leap 10 times his length with ease; one quarter of an elephant's length is a prodigious jump for Jumbo. Yet both distances are about the same number of inches!

And so it is in radio. Miles of antenna wire are required to radiate the 16-kilocycle signal from one of the U. S. Navy's superpowered stations, while a taxicab transmitter of 160 megacycles gets out well with slightly over a foot of antenna. Most standard broadcast signals radiate from a tower several hundred feet high, while a 1-in. nub of wire radiates equally well on the microwaves.

Why do new radio amateurs often find to their amazement that a given antenna can be too long to radiate well at one frequency, yet be too short to do a good job on another? In other words, a simple measurement in feet or inches seems inadequate in itself when discussing electromagnetic effects. Why is it a fact that a given antenna "100 ft. long" conveys little information in itself to a radio engineer. What measurement of length is significant in this case?

The amount of time for the generator to generate one cycle is easily found by dividing the generator frequency into one, that is 1/f secs. And the distance which the electromagnetic wave generated by this generator will travel during the time of one cycle has been given the special name of one wavelength.

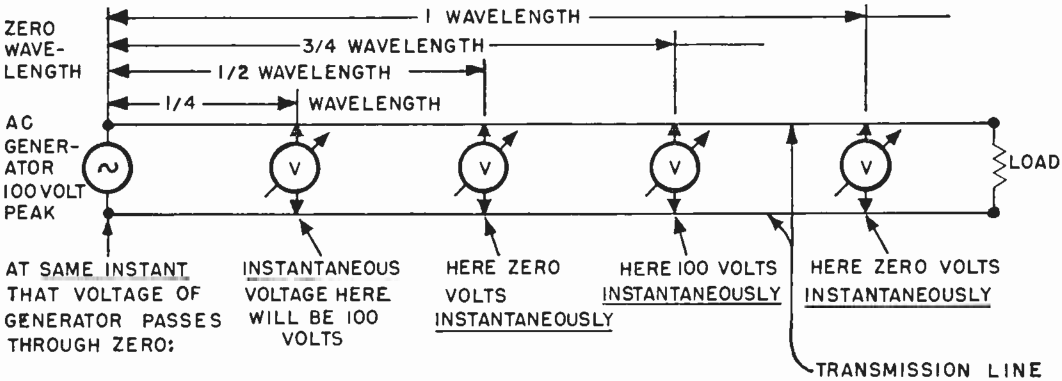
For example, a radio transmitter operating in the center of the standard AM broadcast band at a frequency of one megacycle per second will require one microsecond to complete one cycle. During this time, the wave radiated into space by this transmitter will have moved about 1000 ft., or, to be exact, 982 ft. Thus we say that the wavelength of this transmitter is 982 ft. On the other hand,

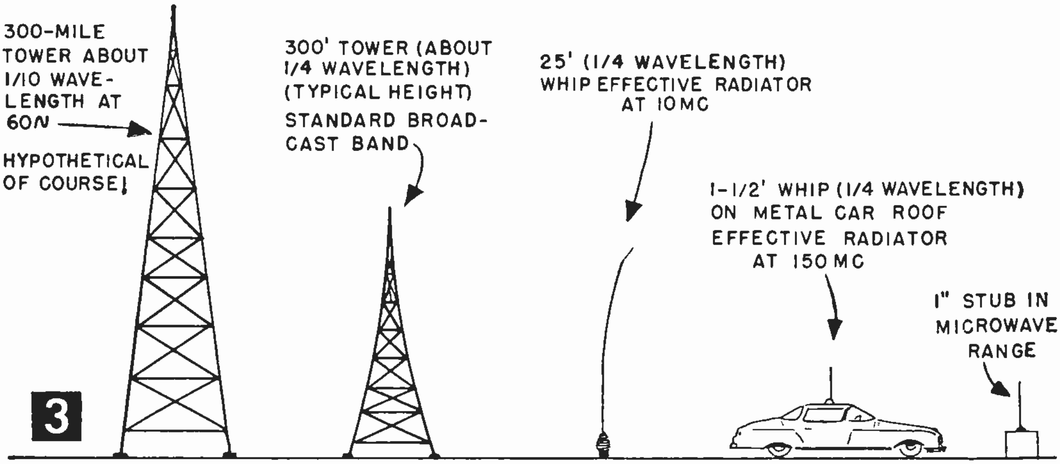


Two extremes in transmitting antennas, each designed for best results at different wavelengths. Towering mast above is that of WBBM, Columbia Broadcasting System radio station in Chicago. At left, above, is sketch of roof-mounted Andrew antenna designed for microwave transmission.

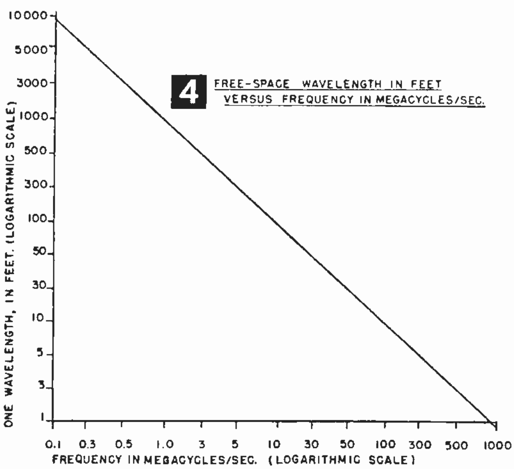
an FM broadcast station, operating on 100 megacycles would have a wavelength of 9.82, or about 10 ft.

Thus, wavelength is inversely proportional to frequency. The higher the frequency, the




3 COMPARATIVE HEIGHT OF VERTICAL ANTENNAS AT VARIOUS FREQUENCIES (NOT TO SCALE)




4 FREE-SPACE WAVELENGTH IN FEET VERSUS FREQUENCY IN MEGACYCLES/SEC.

shorter the wavelength (see Fig. 2).

**Why Bother to Specify Wavelength?** Simply because the wavelength is the only valid unit of size comparison for electromagnetic systems operating at different frequencies that is, antennas, transmission lines, or connecting leads in radio apparatus. An electromagnetic system a certain number of wavelengths in extent behaves in the same manner, regardless of the frequency.

To understand this, we should first recall that it requires time for an electrical disturbance to move through any system. Brief as this interval may be, it is nevertheless both finite and significant. In moving through free space, an electromagnetic wave requires a bit more than five microseconds (millionths of a second) to traverse one mile. This means that such a wave travels slightly less than 1000 ft. during one microsecond. When moving on conducting systems such as antennas and transmission lines, an electrical disturbance may travel somewhat, but not a great deal, less rapidly.

Thus, if a high-frequency ac generator is connected to one end of a conducting system, the *instantaneous voltage* at the far end of the system may be greatly different from the *instantaneous generator voltage* at that same instant (Fig. 3). This effect is entirely different from, and in addition to, any "normal" voltage-drop caused by resistance-losses in the conductor.

What is the magnitude of this instantaneous

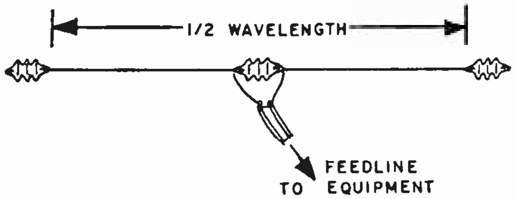



**TABLE A**
**APPROXIMATE LENGTH OF HALF-WAVE ANTENNAS AT DIFFERENT FREQUENCIES**

| Frequency (mc) | ½ Wavelength (ft.) |
|---|---|
| 1.8 | 260 |
| 3.75 | 125 |
| 6.0 | 78 |
| 7.0 | 67 |
| 10 | 47 |
| 14 | 33.5 |
| 21 | 22 |
| 27 | 17.3 |
| 29 | 16 |
| 52 | 9 |
| 100 | 5 |
| 145 | 3.25 |

**Formula:**

$$\text{Half wavelength (ft.)} = \frac{468}{\text{Frequency (mc)}}$$

voltage difference? That depends on the relationship between the time of transmission along the system and the time required for the ac generator to generate one complete cycle (Fig. 3).

**Antenna Variations.** For instance, a 1-ft. antenna "looks" entirely different to a transmitter at one megacycle from what it would look to one operating at 100 *mc*. Or, a 1-ft. connecting lead, in a standard broadcast transmitter is considered short while a 1-in. lead may well be too long at the FM frequencies. But an antenna, or lead, one wavelength long will appear the same at all frequencies, because the time required for an electrical signal to travel over its length will occupy the time of just one cycle, in every case. Thus the wavelength is the only true electromagnetic unit of length, valid in principle for all frequencies from gamma rays through the lowest power frequencies.

A few examples will further reveal the immense practical value of the wavelength concept. Experiment discloses that an antenna, to radiate at all well, should be at least one-tenth wavelength long at the operating frequency. On the other hand, no connecting lead should probably be more than 1/100th wavelength long. In the standard broadcast band, then, antenna towers may be several hundred feet high as in Fig. 1, while internal transmitter leads may be as long as 10 ft., if necessary, without undue bad effects due to length alone. In the FM broadcast band however, an effective antenna need only be a few feet long. But any leads, in the high frequency circuitry, must be not much over 1 in. long, or trouble will inevitably follow.

We can now see why a completely new set of techniques had to be developed before the microwaves above 1000 megacycles could be put to practical use. These techniques do not use connecting leads of the ordinary sort since they would have to be about 1/100 in. long, in order not to cause trouble by virtue of their length.

Now to explode that old fallacy that "high frequencies currents radiate, while low frequencies do not." This false idea arises primarily from the difficulty of arranging practical antennas at the low end of the radio frequency band, rather than from any inherent difference in high and low frequency electrical energy.

A 60-cycle power plant generator will radiate electromagnetic waves quite effectively if it is connected to a suitable antenna system. Such an antenna might consist of a tower at least 300 miles high!

A piece of wire of this length, strung on telephone poles would not radiate well, because the electromagnetic field would be largely destroyed by close proximity to the earth. Long power lines do not radiate appreciably because of the cancelling effect of the two or three wires carrying current in opposing directions.

On the other hand, it is within the bounds of engineering expediency to build antennas for frequencies from a few kilocycles on up to almost the infrared. Thus the fallacy arose that "low frequencies do not radiate." For the higher frequencies, we now know that an antenna of world-wide radiating range can be installed within the attic of a cottage.

While we have expressed wavelengths in feet, international scientific usage favors the meter as a unit of wavelength. This need not disturb us if we remember that a meter is equal to just slightly over 3 ft.

It has become common to employ antennas one-half wavelength long, for practical high frequency radio communication. Such antennas are long enough to radiate well, yet often short enough to install on a reasonably-sized piece of real estate.

But they are of particular interest because such an antenna is self-tuned, that is, it often requires no additional coils or capacitors to make it absorb and radiate maximum power. The wave set-up on such an antenna has a chance to exactly "run down to the end and back" just in time to meet and reinforce the oncoming new pulse. Thus, at the proper frequency, the wave "just fits" the antenna.

# Revive That Old Radio-Phono Combo

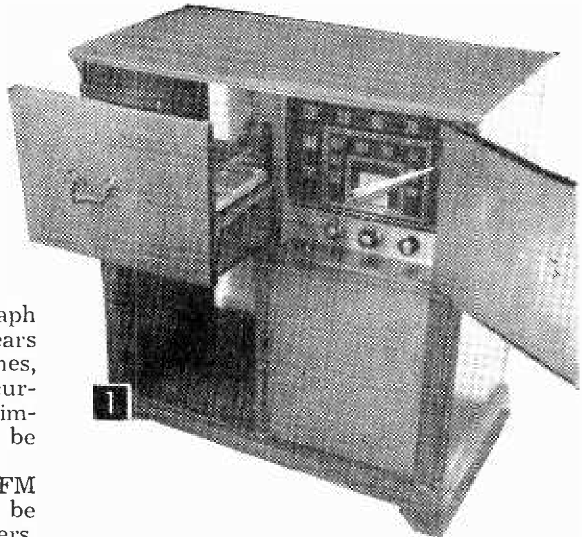
***Five hours' work and $40 worth of parts will transform it into a quality hi-fi system***

**By FORREST H. FRANTZ Sr.**

MANY floor model radio-phonograph combinations between 7 and 17 years old are still knocking around homes, garages, attics, and basements. Whether currently in use or kept in a corner for some imagined future use, they could turn out to be electronic gold mines.

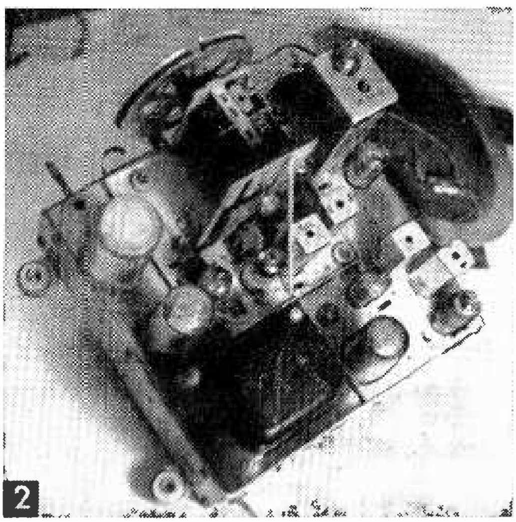
The radios, most of which have AM and FM bands, are usually in fair shape and will be found to be working. The record changers, however, may be on the blink, and reproduction of the entire unit generally poor. If you don't have one of these old models among your possessions, there's a good chance that you can pick one up for $10 to $20 in a used furniture store.

Don't worry about the condition of the record changer, the loudspeaker, or the tone. If the set works, has a power transformer, AM and FM bands, and a cabinet that can be touched up with a reasonable amount of work, you have a great hi-fi bargain in the making.



1

The radio phono herein modified was a 14-year-old Stromberg Carlson that originally cost $200.



2

Most of these old sets had both AM and FM tuners that are probably still in good shape.

**What's Wrong with the Old Models?** They were heralded as having "wonderful tone" and cost about $175 to $500. But they had relatively poor amplifier frequency response, and speakers that lacked the frequency response of even less expensive present-day wide-response speakers. Also, the record changers employed certainly don't meet current standards.

You can nonetheless take advantage of the quality, workmanship, and basic material in these older combinations to make an excellent up-to-date combination. The approximate costs are:

| | |
|---|---|
| new record changer | $25 to $35 |
| new loudspeaker | $12 |
| parts | $ 2 to $10 |

Total cost of the modification should run between $39 and $57, depending on the age and condition of your combination and your choice of record changer. If you are satisfied with the old record changer, the modification may cost as little as $14!

The modified combination in Fig. 1 is a 14-year-old Stromberg Carlson that sold originally for about $200. It had AM and FM tuners, but the record changer was shot, frequency response of the amplifier was poor, and the speaker wasn't up to present day standards. I plotted frequency response curves, made computations, did some design comparison, and engaged in extensive experimentation to arrive at a general approach to the modification of any older combination which would produce greatly improved performance.

NOTE: *If you have an audio signal generator and an audio VTVM available, you might run a frequency response curve before you proceed with modifications. Then you can observe the effect of each improvement as you make it.*

**Chassis Modifications.** First, be sure the tubes are in good shape. Although the set plays (and seems to play well), it may contain weak tubes that detract from the performance that can be had. If you don't have your own tube tester, use one of the many "do-it-yourself" testers that can be found in most neighborhood shopping centers, and replace any marginal tubes.

Next, remove the bypass capacitors in the plate circuits of the audio amplifier stages (see Fig. 3). The audio output tube or tubes connect to the output transformer. The plate bypasses may be connected from plate to ground, or across the output transformer primary. There may be a resistor in series with the bypass capacitors. If so, disconnect and remove it, too. The bypass in the first audio stage (or driver stage, if the first audio doesn't drive the output stage directly) is usually connected from plate to ground, and will probably be a mica or ceramic capacitor of relatively small capacity—about .0001 to .001 mfd. The bypass in the output plate circuit will usually be between .002 and .01 mfd. In a push-pull output stage you'll sometimes find a bypass across each side of the output transformer.

Next, temporarily disconnect one side of any bypass capacitor that may be connected across the volume control, the AM tuner output, the FM tuner output, and the record changer input. Then turn the set on and try each of these functions. The tone will seem poor, but that's OK. The reason for this trial is to assure yourself that you haven't disconnected a capacitor that makes any function of the set subject to squeal or to non-operation.

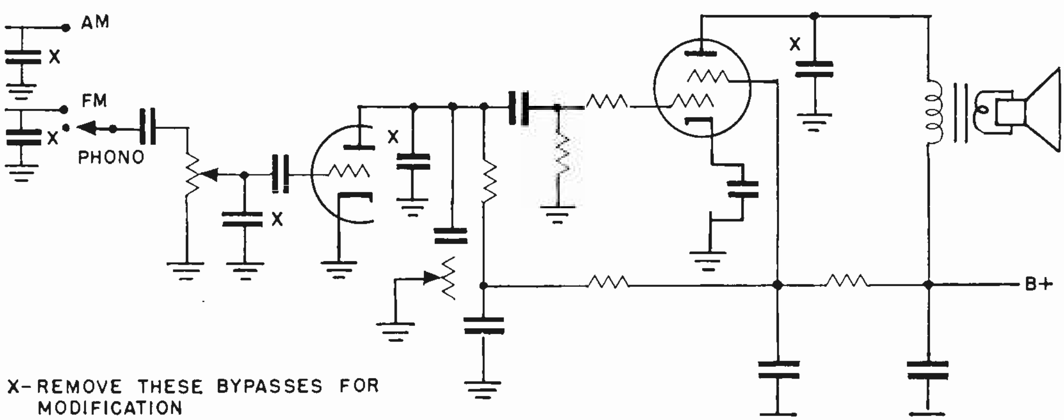
As a final move in this series of bypass disconnections to restore high frequency response, disconnect the tone control capacitor if the capacitor is greater than .002 mfd.

**Remove the Audio Coupling Capacitors** and replace them with 1-mfd, 600-volt capacitors from driver plate to output stage grids, 1-mfd, 400-volt capacitors between input and driver stages (if the audio amplifier has three stages), and .1-mfd, 400-volt capacitors between the volume control and input tube grid. Replace any other audio coupling capacitors that appear in series with an audio signal coupling path with capacitors of about 10 times the capacity of those previously employed. The old coupling capacitors may be leaky and cause distortion.

By increasing the capacity of the audio coupling capacitors we have extended the low frequency response range, and by removing capacitors which shunted the audio signal path we have extended the high frequency response. Two things may possibly happen as a result of this work:

1. The improved high frequency response may cause the set to "squeal." One remedy for this is to shorten leads from output stage plates to output transformer and dress them away from leads and components of the "earlier" stages. If this doesn't do the job—but it usually will—shield leads to and from the volume control.

2. Sixty-cycle hum, which the amplifier may not have responded to previously because of its limited frequency response, may be audible in the output. This may be due to loss of capacity or leakage in electrolytic filter capacitors, or it may be due to inadequate




**3** TYPICAL CIRCUIT BEFORE MODIFICATION original filtering. Bridge a 20-mfd, 450-volt electrolytic capacitor across each of the filters in the power supply to test for open filter capacitors or inadequate power supply filtering. The original capacitors will have to be disconnected before substitution to locate leaky filter capacitors. Finally, the value of capacitors in decoupling filters in the audio circuit can be increased. The 8-mfd capacitor in the plate decoupling circuit of V1 in Fig. 4, for example, replaced a .1-mfd capacitor.

Before we talk about the loudspeaker, the output transformer, and the feedback circuit, there's one more circuit response improvement measure. The low frequency response will be improved by increasing the capacitance of the cathode bypass capacitor in the output stage. Thus, the bypass in the cathode circuit of V2 in Fig. 4 was increased to 160 mfd, 25 volts.

**The Output Circuit and Speaker.** If the output transformer couples to a 6- or 8-ohm speaker, it will not have to be replaced. Many of the better old radio-phono combinations already have 6- or 8-ohm speakers, but some of them do not.

The extended range speaker which we shall install is an 8-ohm speaker, so the output transformer will have to match it. If the loudspeaker is not marked and you don't have the circuit schematic available, you can get a rough estimate of the loudspeaker voice coil impedance by disconnecting the speaker and checking it with an ohmmeter. If the resistance is greater than 4 ohms, the impedance is probably 6-8 ohms and the existing output transformer can be used.

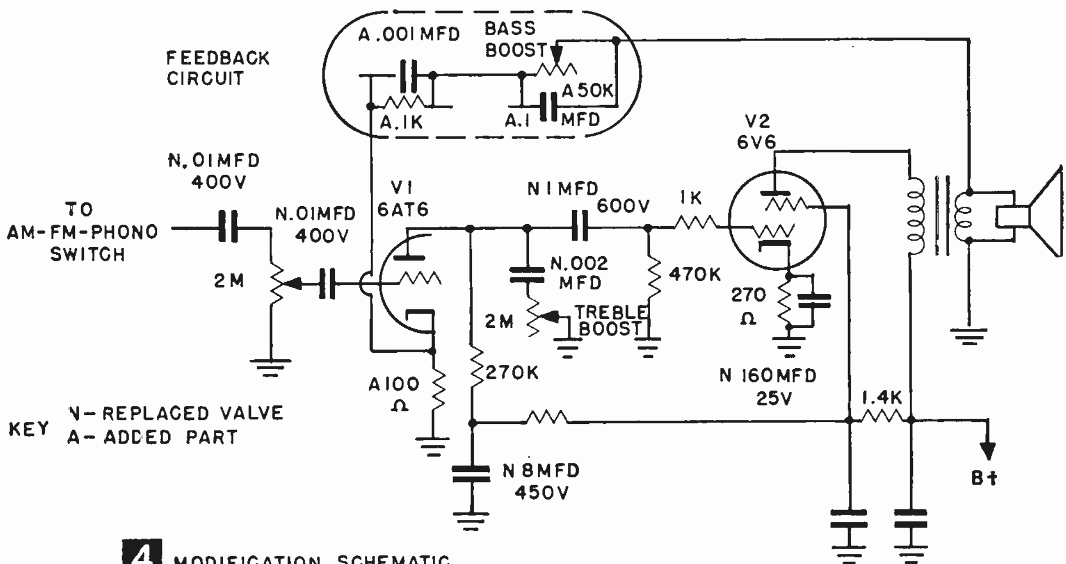
If you have to change transformers, Lafayette TR-13, which costs only $1.45, will work well with a single output tube or a pair of smaller output tubes such as 6V6s in push-pull. If your output tubes are 6L6s, you'll want to use a larger output transformer. Lafayette TR-117 will handle 20 watts (± 1 db from 15 to 100,000 *cps*), and sells for $8.95. This transformer will allow you to use a much better speaker system than we're discussing in this article.

My radio-phono had an 8-ohm speaker, so I utilized the existing output transformer. However, the output transformer was mounted on the loudspeaker. If your transformer is mounted on the loudspeaker, remove it. In most cases there won't be room for the output transformer on the chassis if it isn't located there already. In this case, find a suitable place to mount the output transformer on the chassis platform in the cabinet. If you mount the transformer off the chassis, the interconnections will not be as clean looking, but this is no problem. You may need extra holes or jacks available on the back of the chassis to accommodate the output transformer to the feedback-base boost circuit. I used the cabinet lamp jack (Fig. 6) on my set for the voice coil interconnection.

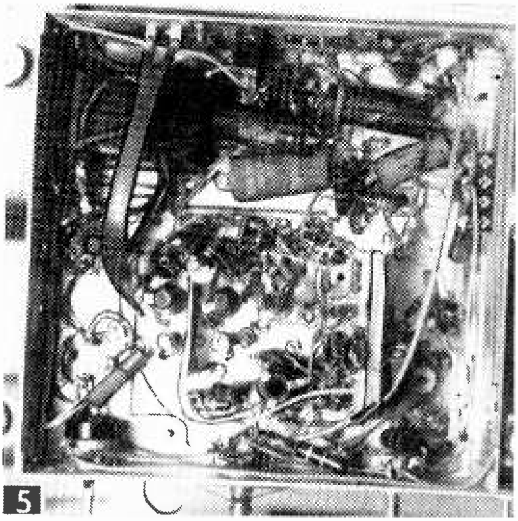
Connect the new loudspeaker, a 12-in. Lafayette SK-183 (frequency response 35-17,500 *cps*, $11.95) to the output transformer secondary.

**Feedback and Bass Boost.** The feedback and bass boost circuit mounts on the chassis. The simple circuitry flattens and extends the frequency response of the amplifier and permits you to obtain a large amount of bass boost.

If your set has a bypass capacitor on the first audio stage cathode, remove it. In most cases, however, the cathode of the first audio stage will be connected directly to the




**4** MODIFICATION SCHEMATIC



5

Bottom view of chassis. The larger capacitors required for modification may present some installation problems.

ground. Break this connection and install a 100-ohm, ½-watt carbon cathode bias resistor as shown in Fig. 4.

Next, connect the feedback and bass boost circuit consisting of a 1K, ½-watt resistor shunting a .001-mfd capacitor in series with a 50K control shunted by a .1-mfd capacitor. The capacitor voltage rating is not critical, and a rating of 50 volts or more is satisfactory.

Note that one side of the output transformer-loudspeaker connection is grounded. To determine the ground and cathode feedback return connections, turn the set on and tune to a station. Connect the cathode feedback path and ground path to the loudspeaker as shown in Fig. 4. Volume should decrease and tone should improve. If not, reverse the ground and cathode feedback connections to the speaker-output transformer lines.

The 50K bass boost control may be mounted off chassis (Fig. 7A) on an improvised sheet metal bracket. If the set already has a tone control with a resistance of 50 to 100K, use it. I used the original set tone control (2M in Fig. 4) for treble boost. If the set originally had two tone controls, you won't have to provide an extra tone control mounting position. Otherwise you'll have to improvise. I used a miniature control (Lafayette VC-36) so that I could have an inconspicuous knob to the left of the original knob group (Fig. 1).

**Record Changer.** You can choose any record changer that will fit in your available space. I've listed two possibilities in the materials list. I recommend a new record changer for several reasons. First of all, old record changers usually are victims of wear and poor care. Second, some of the much older record changers have only one speed—78 *rpm*—which is obsolete. Third, the cartridge on these changers is also inadequate for 33⅓-*rpm* records. Finally, older changers will not play stereo records.

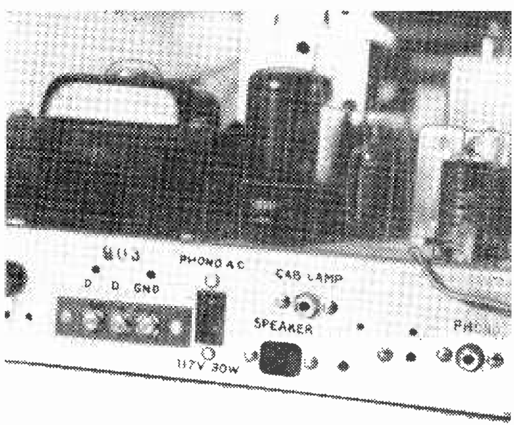
When you buy your record changer, buy the required mounting board with it. Remove the old mounting board from the record changer platform. Lay the new mounting board on the platform and lay the record changer on it as shown in Fig. 8. Use a ruler to determine the amount of trim required on the front of the new mounting board. You can also determine the required side trim at this point. Be sure to consider all possibile interferences with record changer operation before you start trimming the base. The back may not have to be trimmed because there's usually extra space in the back of the cabinet.

After you've trimmed the new base to fit on the platform, stain it to match the cabinet finish. Install the base.

Next, connect the pick-up leads from the stereo pick-up in parallel by installing the two shunt wires. This permits you to play monaural or stereo records through the amplifier. Finally, if the shields on the pick-up leads are not grounded to the metal record changer frame, provide a connection for this purpose.

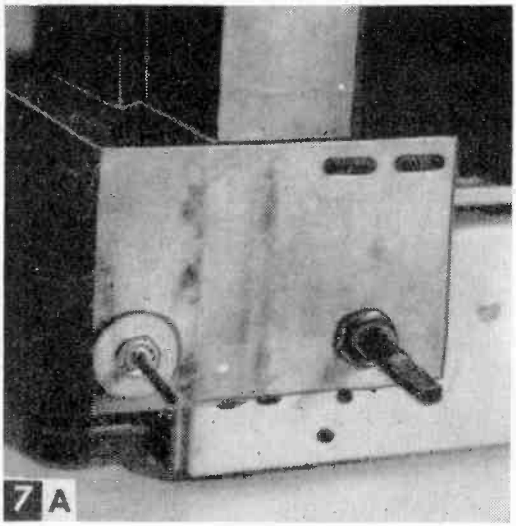
**Installation in Cabinet.** Drill an extra hole in the front of the cabinet for the bass boost control if you need it.

If the combination originally had a speaker smaller than 12 in., the speaker mounting board will have to be removed and the speaker hole enlarged. Remove the grill cloth if it is attached to the speaker mounting board be-



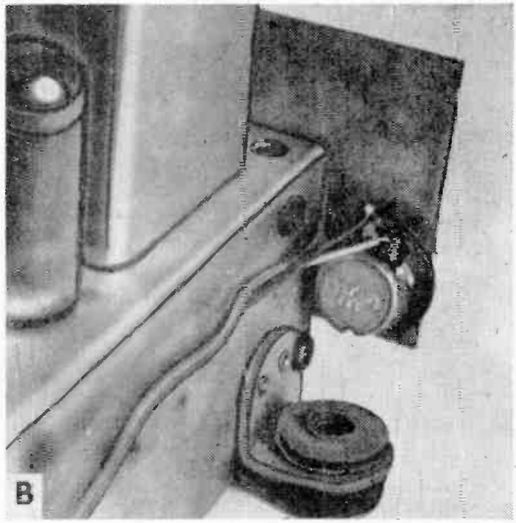

6

No changes were required with respect to connectors, except that the cabinet lamp jack was disconnected from the filament supply and was used for the feedback connection from the output transformer. This provision is unnecessary if the transformer mounts on the chassis.



7 A

Front view showing bass boost control mounting.



B

Back view of bass boost control with connections.

MATERIALS LIST—RADIO-PHONO MODIFICATION

Record changer (Lafayette PK-605W, $22.35)
Mounting board (Lafayette PK-608W, $1.05)
Loudspeaker (Lafayette SK-183, $11.95)
available at Lafayette Radio, 111 Jericho Turnpike, Syosset, N. Y.

OR

Record changer (Webcor type 1041-51, Allied 89RX-712, $30.83)
Mounting board (Webcor type A-1938T, Allied 89RX-640, $1.96)
available at Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.
Remaining parts, capacitors, and resistors as required for your specific modifications are available from either Layafette or Allied.

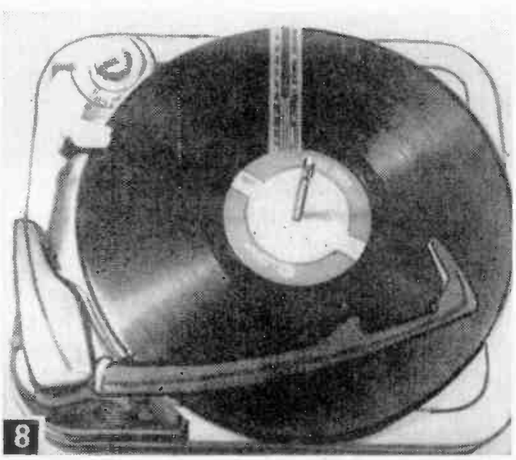
fore starting the enlargement process. A 10-in. dia. hole is required to mount a 12-in. speaker.

Install the chassis, record changer drawer, and loudspeaker in the cabinet, and replace the knobs. The chassis and record changer mounting arrangements are the same as before, but the speaker mounting arrangements may be inadequate. Use round head wood screws long enough to bite into the speaker mounting board, but short enough not to go all the way through.

The output transformer, if you must resort to off-chassis mounting, can be mounted behind the chassis as shown in Fig. 9, and fastened with wood screws. The frame of the output transformer should be grounded with a jumper to the chassis. Or, if you used a shielded lead for the feedback circuit as I did, connect a lead from the shield to the transformer frame.

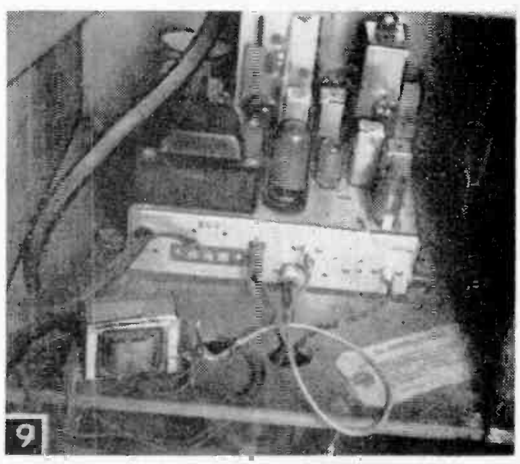
If you notice hum, you may be able to reduce it by reversing the record changer power plug to the chassis with gain up and the turntable running.

Use either one of the record player plugs and leave the other disconnected (Fig. 10).



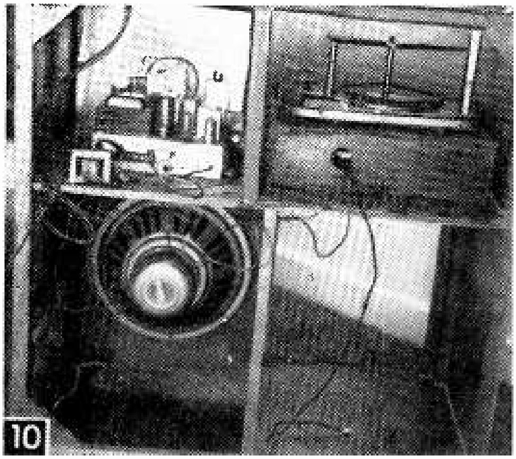
8

Arrangement for determining record changer mounting board trim.



9

Interconnection wiring. Output transformer is mounted in the cabinet adjacent the chassis.



The modified chassis, new loudspeaker, and new record changer. Only one of the record changer plugs is used (see text).

It's a good idea to tape up the unused plug.

**Variations.** The more elaborate older sets may contain more than two audio stages. In this case, the feedback may be too great. Simply insert a series resistor in the feedback circuit. The resistance value will have to be determined experimentally. A ½-watt carbon resistor of the required resistance is adequate.

Some of the older sets have complicated tone and equalizing circuits. Generally speaking, they do not contribute much after incorporation of the modifications described. Proceed with caution if you don't fully understand these circuits and what they do.

In a few rare cases, you may encounter a volume control after the first audio stage. If so, place the feedback on the cathode of the tube immediately following the volume control. The volume control should not be within the feedback loop.

If the volume control has a compensation tap on it, simply disconnect the components which are connected to the tap. A resistor and capacitor are usually involved.

A few of the older sets had direct coupled output stages. In most cases, it is easier to leave these stages as they are. The same applies to transformer coupled output stages. A better interstage coupling transformer may be desirable. Because of the special nature of this consideration, it's one that you should take up with your parts supplier.

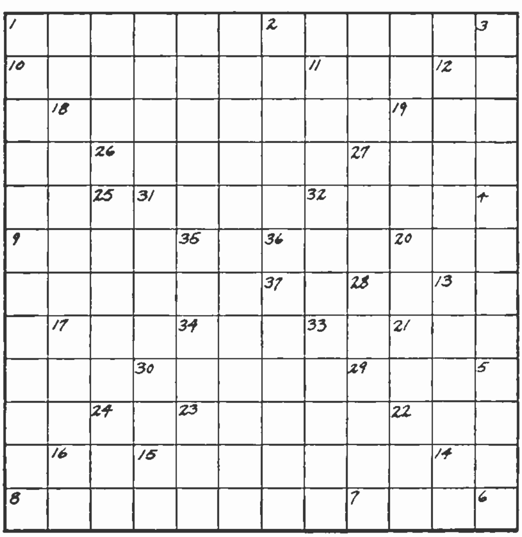
**General Information.** In some cases you'll find the schematic or more so a tube placement diagram fastened to the back of the cabinet. You'll find these very helpful.

Schematics, tube placement, and alignment information can be found in serviceman circuit manuals such as those published by Howard W. Sams and John F. Rider. I proceeded without this kind of information, but original circuit data will generally prove helpful.

# Roundword Puzzle

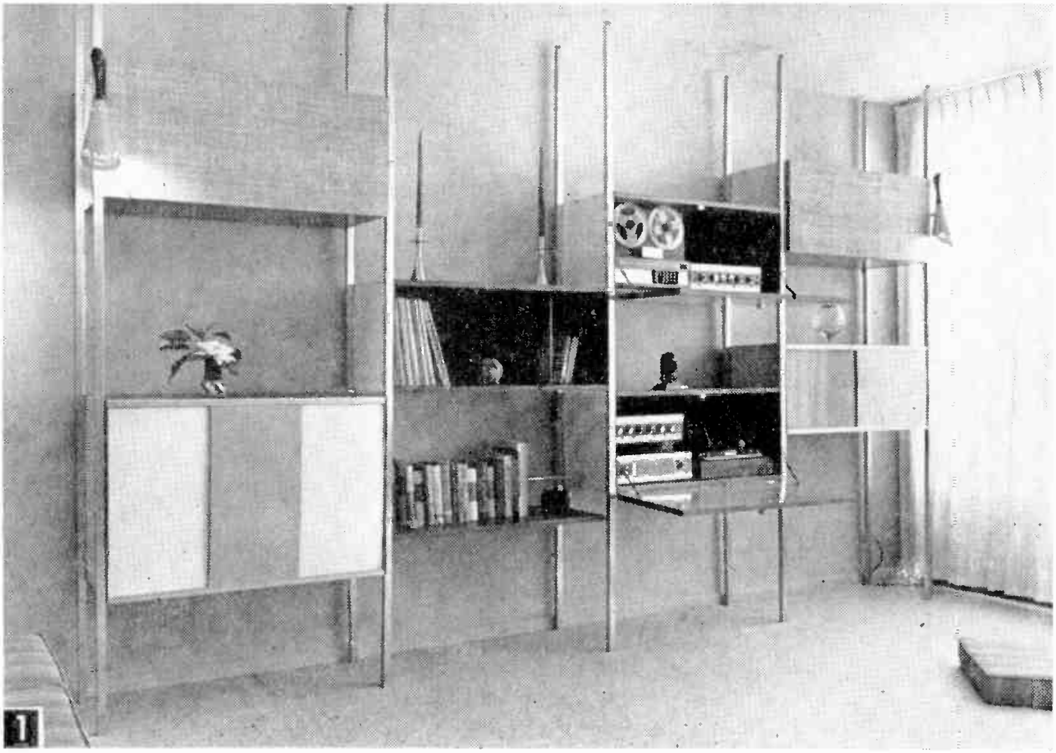
**The words in this puzzle are all tied together in succession—that is, the last letter of one word is the first letter of the next—so some of them read from right to left. (Solution on p. 196, but don't peek unless you have to!)**

By JOHN A. COMSTOCK




## CLUES

1. Type of indicator with doubled windings.
2. Circuit which amplifies before and after detection.
3. Rare gas used in discharge tubes.
4. Gas group of which number 3 is a member.
5. Induced current.
6. CRT coil component.
7. Changes frequency response.
8. Superhet alignment technique.
9. Electromagnetic radiation rays.
10. Unit of light wave measure.
11. Single closed circuit or cell in a network.
12. Type of circuit found in auto radios.
13. Unit of elastance—reciprocal of capacitance.
14. Tank circuit effect.
15. Connector.
16. Square-wave voltage.
17. Famed American electronics inventor.
18. Used in electronic math.
19. Atom with temporary loss of electron.
20. Ham operator's 30.
21. Meter needle sometimes makes one.
22. Action employed in speakers.
23. Type of triode transistor.
24. Type of band associated with FM.
25. Watt-hour (abbr.)
26. Antenna tuning bar.
27. Minimum signal or current.
28. Effective radiated power (abbr.).
29. Time required for a cycle.
30. Type of connection.
31. Screw found in some knobs.
32. Word following.
33. Sticky insulation.
34. Unit sounding like Indian expression.
35. Electrical opening.
36. Amplifier used at gatherings (abbr.)
37. Type of crystal cut for use between 500 kc and 10 mc.




Modern stereo installation uses Allied Radio Knight Kit 40-watt amplifier (center) to drive two KN-800A coax speakers in extreme upper corners. Plans for this low-cost installation appear in the article beginning on p. 70.

# Lowdown on HI-FI SPEAKERS

**Straight talk from an expert about choosing the right speaker, frequency response, impedance matching, connecting extension speakers, stereo phasing**

By LOU DEZETTEL
Engineer, Allied Radio Corp.

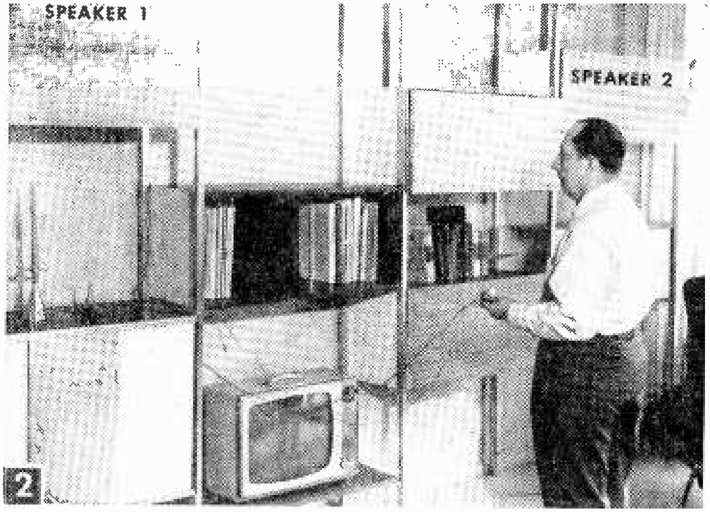
TO DESERVE the label "hi-fi" your sound installation must be capable of reproducing music with the closest possible resemblance (or fidelity) to the original sound.

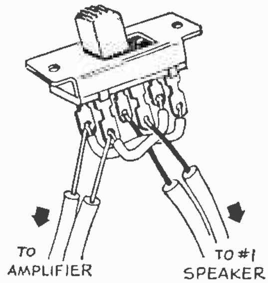
To hear music properly, we need to listen at a higher volume than what we might use for background music or for ordinary radio listening. Without this volume, the ear cannot hear the balance of sound as it was originally played. Thus, the weakest link in the home hi-fi is usually the speaker system. To get true quality results, you must choose the right speakers and make sure they are properly installed.

Let's talk about three general kinds of loudspeakers—radio, public address, and hi-fi. Radio speakers usually are inexpensive and small, 6-in. diameter or less; you find them in car radios, table radios, and most TV sets. Though the speaker may sound fairly good, frequency response is usually poor, and it gets worse when you feed it with increased volume. Efficiency is good, but power handling capacity is low. The radio speaker should never be used as a main source in the true hi-fi system.

**Public Address Speakers** are distinctly different. Larger in size, they are built to handle considerable amounts of sound power, but at a sacrifice of hi-fi frequency response. Designed for halls and auditoriums, quality is usually poor at low (bass) frequencies.

The *true hi-fi loudspeaker* is a separate breed. It is built bigger and huskier to do a better job on the bass notes. If you have plenty of space, the 15-in. size is best. If your space is limited, 8-in. speakers can be used. The 12-in. size is most popular and comes in many price brackets. Remember that increasing speaker size improves the response of only the *low end* of the musical scale.




**S&M consultant Erving Edell uses comparison method to judge by ear whether speakers are in phase. Switch in his hand permits instant reverse of one pair of speaker connections. When base sound appears to come from center of room, speakers are in phase.**

A hi-fi speaker must have a wide frequency response. It must reproduce all musical notes from 15 cycles up to about 15,000 cycles per second (c.p.s.) with about equal efficiency. Because a single speaker cone can't handle the job a good speaker has two or more sound generating parts. The hornlike speaker mounted in the center (Fig. 3) is called a tweeter and reproduces the higher frequencies. Around the tweeter is another cone that helps to reproduce the mid-range tones. Inside the back cover of the speaker is an electrical circuit called a *crossover network*, that divides the incoming frequencies into two ranges. Thus single speakers may be called two-way or three-way coaxial speakers. You can also select and install separate woofers (large single-cone speakers) and tweeters in almost limitless combinations.


**Knight KN-800A 12-in. speaker illustrates coaxial construction. The center funnel shape is the tweeter, surrounded by a mid-range cone. (Photo by Allied Radio, Chicago)**

**About Baffles.** A speaker is only as good as its baffle. The bulky floor-type baffle usually is best, if you have the room. With about 5 cu. ft. of inside space, the baffle includes a port opening in front besides the regular speaker opening. This permits lower frequencies to come out in phase with the main sound and reinforces the bass notes. That's why the trade calls this enclosure the "reflex" baffle.

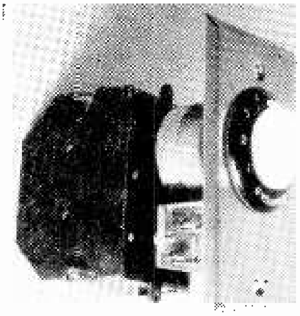
If you lack room space, the next best answer is a smaller baffle (Fig. 5) installed on a shelf. Generally these units have no reflex feature and are airtight on all sides and back. Hence they are called *infinite baffles*. The smaller baffle can do a good job on low frequencies, provided that you install a *high compliance* speaker; a speaker designed so that the cone moves back and forth a greater distance. High compliance construction results in lower power handling efficiency, so this kind of a speaker must be driven by a higher power amplifier; not less than 20 watts per speaker or 40 watts on stereo should be considered.

**Wiring Speakers.** Two basic rules are important. First, the output tap on your amplifier must match the speaker impedance; second, when two speakers are used, they must be in phase.

Impedance matching is easy. The impedance in ohms is usually marked on the speaker frame. Connect directly to the amplifier tap marked for that impedance. All good hi-fi amplifiers have taps for 4-, 8-, and 16-ohm speakers. Generally you can use any good two-conductor cord for wiring speaker connections. Common lamp cord, usually 18-gauge wire, is adequate for runs of up to 50 ft. For shorter runs, smaller 20-gauge wire may be suitable and more decorative. Expensive shielded cable of the type used for microphones offers no advantage in wiring speakers. Because the speaker wire carries very low voltages, there is absolutely no fire hazard.

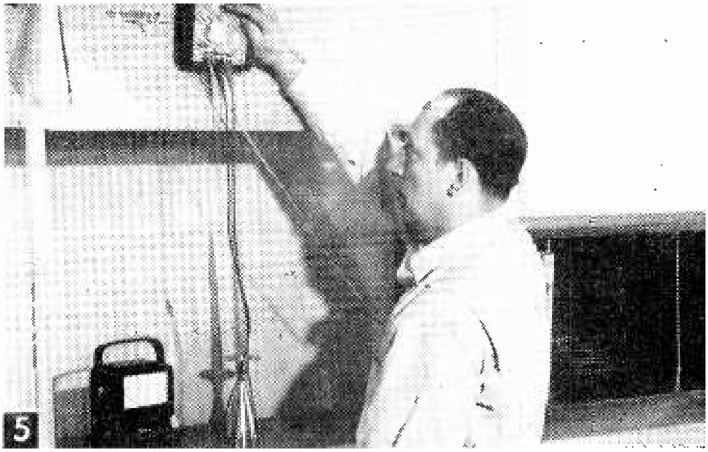
You can run your speaker lines along baseboard and through walls just like telephone wire. Just connect the two wires at one end of the speaker cord to the speaker terminals. At the other end connect one wire to the terminal marked "C" (Common) and the other to the screw marked 8- or 16-ohm depending on the rating of your speaker.

**Ohm's Law Applies.** The 4-ohm terminal



4

L-pad assembly for controlling volume of remote speakers can be mounted in standard wall box.



5

RCA Phase Checker gives technician overall reading on complete installation. Sound-powered receptor units in front of each speaker feed output to VOM which indicates volume on 50-microamp or ¼-volt dc scale.

screw is intended for connecting more than one speaker to the same amplifier channel. A little arithmetic is required. According to Ohm's Law, two 8-ohm resistors connected in parallel are equal to one 4-ohm resistor. Thus you can connect two 8-ohm speakers in parallel to the 4-ohm screw, or two 16-ohm speakers in parallel to the 8-ohm terminal. Just remember that a parallel connection is like plugging two lamps into one cube tap.

Speakers connected in parallel can be spread out with a single channel system to give your sound sort of a spatial effect, or one could be used as an extension in another room. Though it adds a feeling of depth, parallel connection is inferior to double speaker operation from a stereo amplifier where you have two separate output channels with speakers connected independently to each.

Impedance matching is a much-confused question. A hi-fi system is similar to an automobile. When you are cruising at low speed, you may be using only 20 *hp*. But if you want to get maximum performance on a race track, you have to use the right combination of gears, transmission, and engine to get top power. The same reasoning applies to amplifiers. Running extension speakers at low volume, you can connect a 16-ohm speaker to the terminals of a 4-ohm speaker and probably will not be able to hear a loss of quality. You can even wire quite a number of extension speakers in parallel without regard to impedance match and they will operate fairly well at low volume. Lower impedance speakers in such a system will draw more current and produce more volume; higher impedance speakers will produce less sound. These sound levels can be adjusted by L-pads. But turn the volume up, and the amplifier will be called on to put out more power. Unless the speaker system impedance matches that of the output line, your system distortion will increase.

**Phasing.** Whenever two speakers are operated together in the same room, whether used for monophonic or stereo, they must work in phase. This means that the cones of the speakers are pushing or pulling in the same direction at the same instant. If the speakers are out of phase, you lose power and bass tones. The remedy is to reverse connections to the terminals of one of the two speakers.

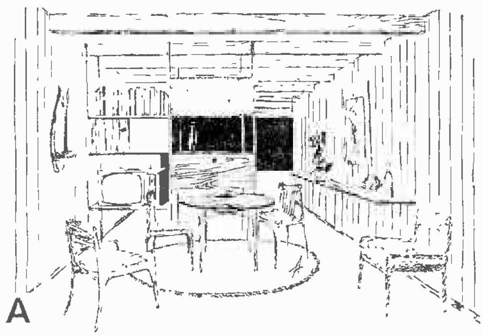
How can you tell when speakers are in phase? The hi-fi technician uses an instrument such as the RCA phase checker (Fig. 5), which feeds into a sensitive voltmeter. You can also phase by ear. You will need to install a DPDT switch (Fig. 2) in one of the speaker lines. Then turn on your tuner or put a monophonic record on your player. Run the volume up high, stand half way between the two speakers, and throw the switch back and forth. If the low notes seem to come from the space between the two speakers, they are in phase. If sound seems to come from each of the speakers separately, they are out of phase.

**Hi-Fi Extensions.** As long as you've spent the money for a hi-fi system, why not pipe some of that good music to other rooms. Connect your extension speakers from a monophonic system in parallel. On a stereo system, connect to the center channel output terminals. Most modern amplifiers have this built-in circuit, which mixes some of the signal from both stereo channels. Generally, it is used to fill the "hole in the middle" when left and right stereo speakers are far apart.

If your stereo amp lacks a center channel, you can install an extension speaker either by tapping one of the speakers or by connecting a second monophonic amplifier through two isolating resistors so it picks off some of each of the channels.

Frequently it is necessary to control the extension speaker at a remote point. Controls called l-pads are manufactured by *Switchcraft*, *Vidaire*, and *Audiotex*. Select one with an impedance rating matching that of your speaker. Usually the lowest wattage ratings listed in the electronic catalogs are ample for home hi-fi use.

Stereo speakers are mounted in the two baffles at the top left and right. Installation has extra space for future additions, is easy to move, and does not mar walls, ceiling or rug. Room divider (A) is alternate design.



A

## Modular Home

# Entertainment Center

**With pre-cut material, an apartment dweller can assemble this ultra-modern hi-fi wall, using only a drill, 6-ft. rule, and screwdriver**

By BOB SRODON

Designer, Masonite Corporation

THE trouble with most hi-fi cabinet designs has been that you had to have a complete power workshop to build the project. And, though it has been done, it sometimes is hard to fit a full size table saw, sander, and jointer into a modern apartment or ranch house.

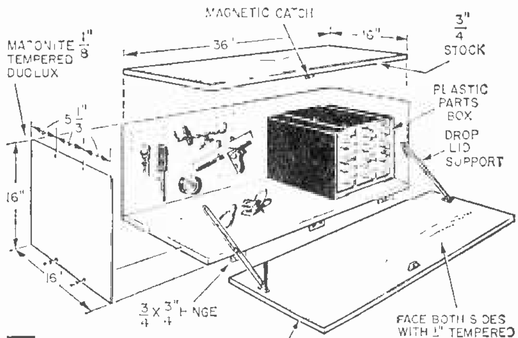
This up-to-the-minute design that has the styling and eye appeal of $500 custom installations has been worked out jointly by hi-fi experts of Allied Radio Corp. and Masonite Corp. You can put the unit together with common hand tools, and it is a beautiful addition to any home or apartment. To ease the strain on the pocketbook, you can start out with one section and add the rest later.

Every part of the entertainment center has been tested and proven in working installations. Working only with the plans, a 6-ft. rule, a ¼-in. electric drill, and screwdriver, the author and a helper were able to erect the unit shown (Fig. 1) in one busy 5-hour work spree. Wood and *Masonite* parts can be ordered from local lumber yards cut to exact size or, if you prefer to do your own, can be sawn on a new portable power table saw that was also tested on the project (Fig. 5).

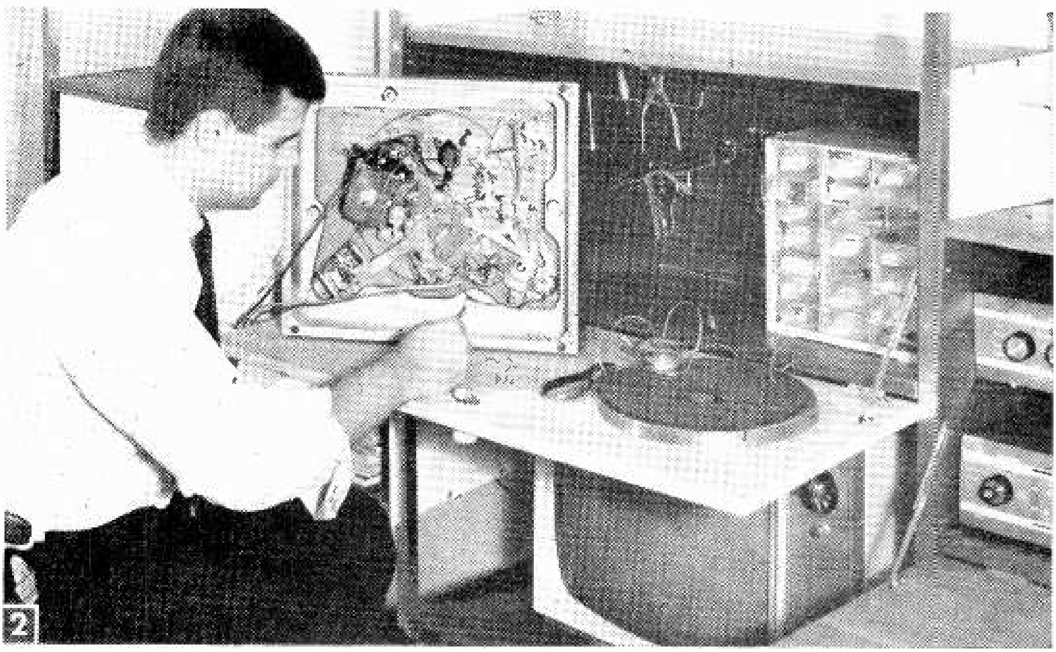
This is a modular design; parts are interchangeable and dimensions are proportional to one another. The basic 1x3-ft. module is a rectangular shape that pleases the eye and fits well with not only contemporary modern, but with most other styles of furniture, too. The complete four-section stereo unit (Fig. 1) fits in a 12x15 ft. living room. In a smaller room, the end sections can be used separately on opposite walls. In long rectangular rooms, or duplex living rooms, the room divider design (Fig. 1A) makes an effective separation of living areas.

The basic design (Fig. 1) houses a tape deck, pre-amp, amplifier, tuner, turntable, TV set, stereo speakers, plus 200 LP records and a tape library. There is ample room for at least a hundred books and a tool-work desk gives you a space for light hobby work and for assembly and testing of electronic kits.

**Start Your Installation** by making a list of all your hi-fi equipment. Use a soft pencil and wrapping paper to draw up full size front view patterns of the equipment enclosures. Check to be sure that you have ample space for all control knobs, wiring, and connections. The next step is to order the aluminum poles. Manufactured especially for this project by Midland Metal Products, the 10-ft.-long, 1-in.-square aluminum poles are treated with a scratch and stain resistant brass satin finish that will not oxidize. The poles can be purchased (see Materials List) in the standard 10-ft. lengths, or in 7- and 8-ft. lengths. The ceiling adjuster will take care of a 2-in. ceiling slope, so if your ceiling happens to be 9 ft. 3 in. high, plan to saw 10 in. off the 10-ft. pole. Be sure to measure at each point on the ceiling where the poles will be installed. There is no need to allow for a carpet coaster if you have a soft nap rug. The installation shown in Fig. 1 was moved several times after initial setup, and though the poles had been in place for months, the hollow square pole section did not damage the rug. On wood, hard rugs, or linoleum floors, use rubber or felt pads

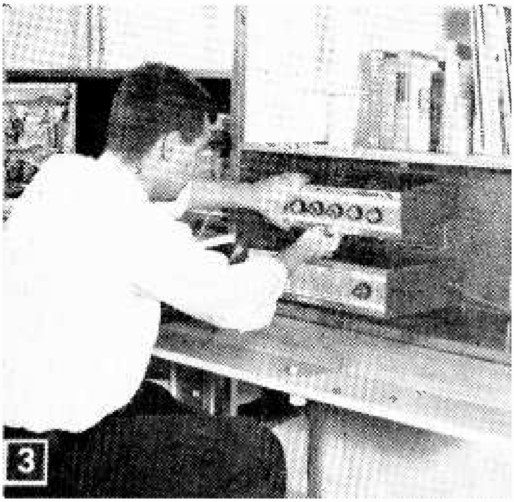



2A WORK CENTER



2

Author Srodon installed work center cabinet 29 inches above floor for convenience in assembling kits and servicing equipment. Ham station could be enclosed in similar module.




**Peg board shelf brackets support tuner and amplifier. Bracket spring action cushions tubes against vibration. Hi-fi components shown are Allied Radio Knight-Kits.**

plated wood screws and chrome plated countersunk washers located on 6-in. centers as in Fig. 4. It would be best to use clamps and square wood blocks to guarantee square accurate corners. Next fasten the peg board to the cabinet backs with the same size screws and washers. Rather than risk poor fitting holes, it is best to buy the right size of screwhole drill.

Next add the speaker face, drop lid doors, and sliding doors. Detailed information on these steps is provided in Masonite Project Plan AE-382 (see Materials List).

As soon as one cabinet is finished, you can start the pole assembly. It is important to locate the poles dead vertical to the floor. Use a large carpenter's square or the edge of a square carton to check. Now for an example, let's install the storage section on the far left side (Fig. 1). The cabinet fastens to the four poles from the inside with self-tapping sheet metal screws. Measuring carefully, drill holes in each pole exactly the same height up from the floor. Use a center punch or sharp under each pole.

Obtain the ⅛-in. Masonite tempered Duolux and Pegboard at your local lumber yard. You can order the panels cut to exact size, if your dealer is equipped with panel-cutting equipment. Be sure to explain that you want dead square, clean cut pieces. If the lumber yard is not set up with the proper equipment, order the pieces ⅛ in. oversize to allow for edging with a sanding block.

For the tops and bottoms of each cabinet (Fig. 4), you will need ¾-in. wood. Finished pine will serve the purpose, or you may be able to purchase the stock in veneered hardwood grains. Another source would be salvaged hardwood from discarded furniture, often available in used furniture shops.

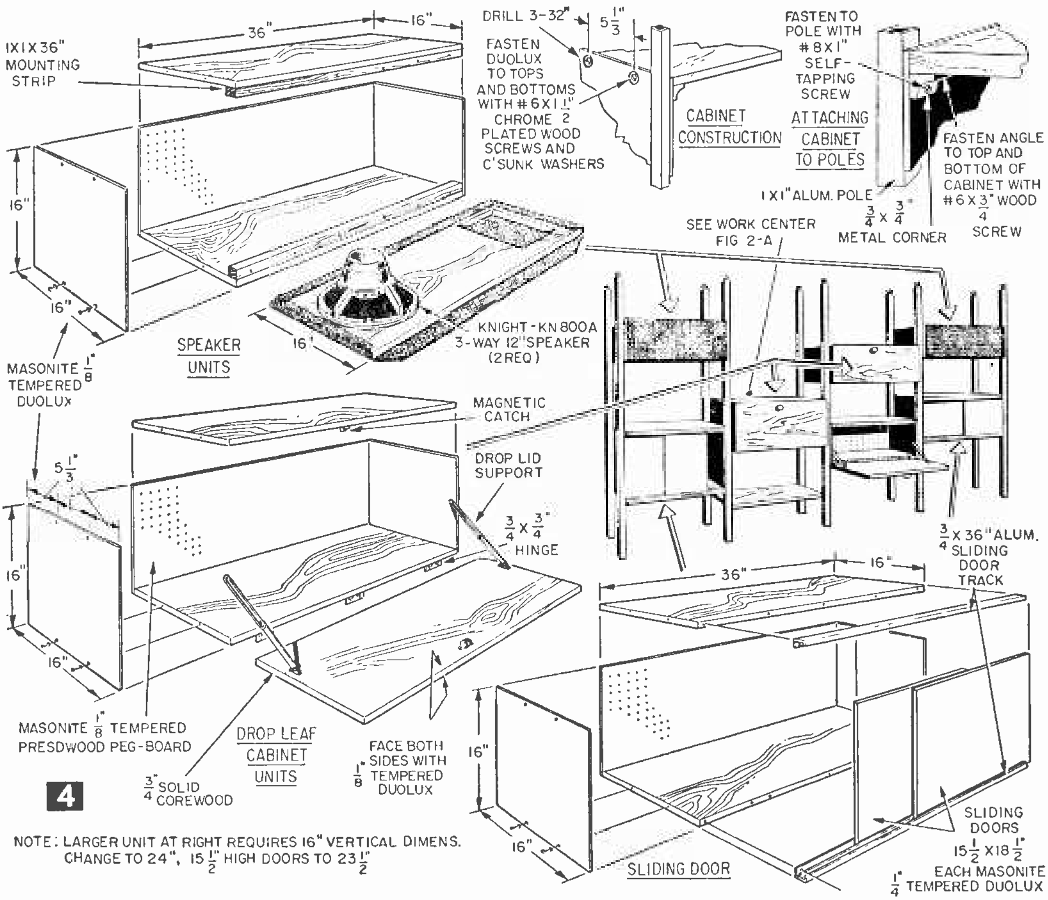
**Assemble the Cabinets** by screwing the side panels to the top and bottom pieces with #6x1½-in. chrome

MATERIALS LIST—HOME ENTERTAINMENT CENTER

NOTE: This list applies to the four-section unit as shown. Plans can be altered to fit larger and smaller rooms. You can design your own units based on one, two, or three sections, ordering fewer parts as required. But it is recommended that you *do not* change the basic unit sizes, because this may affect the balance and eye appeal of the design.

| Amt. Req'd. | Size and Description | Use |
|---|---|---|
| 10 | 1"-square etched aluminum poles. Anodized and guaranteed not to fade or discolor. Available in natural aluminum or brass finish in 7, 8, or 10-ft lengths with 2" manual adjustment and pads for floor and ceiling. $5.20 per pole, plus shipping, from Midland Metal Products, Vicksburg, Mich. Minimum order, 4 poles | vertical support |
| | Alternate—Aluminum poles as above in same size and finish with pads, but with built-in spring loaded tension device which eliminates hand tightening. $7.25 each. Minimum order, 4 poles | vertical supports |
| 4 | 36" sliding door tracks, ¾ x ⅞" with ¼" slot. L. A. Darling Co. or equal. Cost $1.50 at hardware stores and lumber yards. | panel slides |
| 60 | 1 x 1" metal corners, Stanley #996½ or equal | cabinet supports |
| 9 | ¾ x ¾" cabinet hinges with screws | panel hinges |
| 6 | 8" drop lid supports | panel mtg. |
| 3 | magnetic catches | drop panels |
| 154 | #6 x 1½" chrome plated slotted wood screws with #6 chrome plated countersunk washers | side to top and bottom fastenings |
| 60 | 1" #8 self-tapping chrome plated screws | fastening cabinets to poles |
| 12 pcs. | ⅛ x 16 x 16" Masonite tempered Duolux | side panels |
| 6 pcs. | ⅛ x 16 x 24" Masonite tempered Duolux | side panels for large cabinets |
| 2 pcs. | ¼ x 18½ x 23½" Masonite tempered Duolux | sliding doors |
| 1 | ⅛ x 24 x 36" Masonite tempered Presdwood pegboard | back panel for large cabinet |
| 2 pcs. | ¼ x 15½ x 18½" Masonite tempered Duolux | sliding doors for small cabinet |
| 6 pcs. | ⅛ x 16 x 36" Masonite tempered Duolux | for facing cabinet doors |
| 15 pcs. | ¾ x 16 x 36" solid wood stock | shelves, tops, bottoms of cabinets |
| 2 pcs. | ¾ x 16 x 36" solid wood stock | speaker baffle plates |
| 2 | 1 x 1 x 36" wood mtg. strips | attaching baffle plates to speaker cabinet |
| 1¼ yds. | speaker cloth | |
| 2 | swivel mtg. decorator lamps, spun metal similar to type shown in photos, available by special arrangement, Roto Electric Co., 1914 N. Milwaukee, Chicago 47. $4.95 post paid | lamps |
| Misc. | knobs, Pegboard shelf brackets, for Hi-Fi components, Pegboard fittings for tool rack, sealer, wood stain, laquer or enamel | |

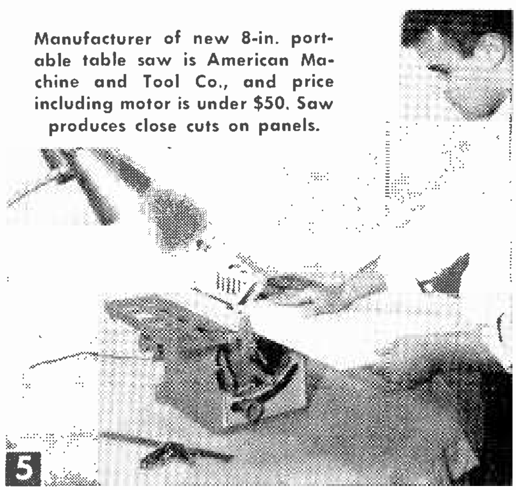
NOTE: For free plans, write Masonite Home Planning Service, 29 North Wacker Drive, Chicago 6. For latest information on sound installations write Hi-Fi Department, Allied Radio, 100 N. Western, Chicago 80.




pointed tool to mark the hole and drill dead center on the 1-in. aluminum. Now install metal corners (see Materials List) *on the inside* of the cabinet, feeding the 1-in. #8 size sheet metal screws through the corners and Masonite and into the aluminum. The screws will cut their own thread, and provided that you stick to the right size drill, will hold cabinet weight up to a hundred pounds or more.

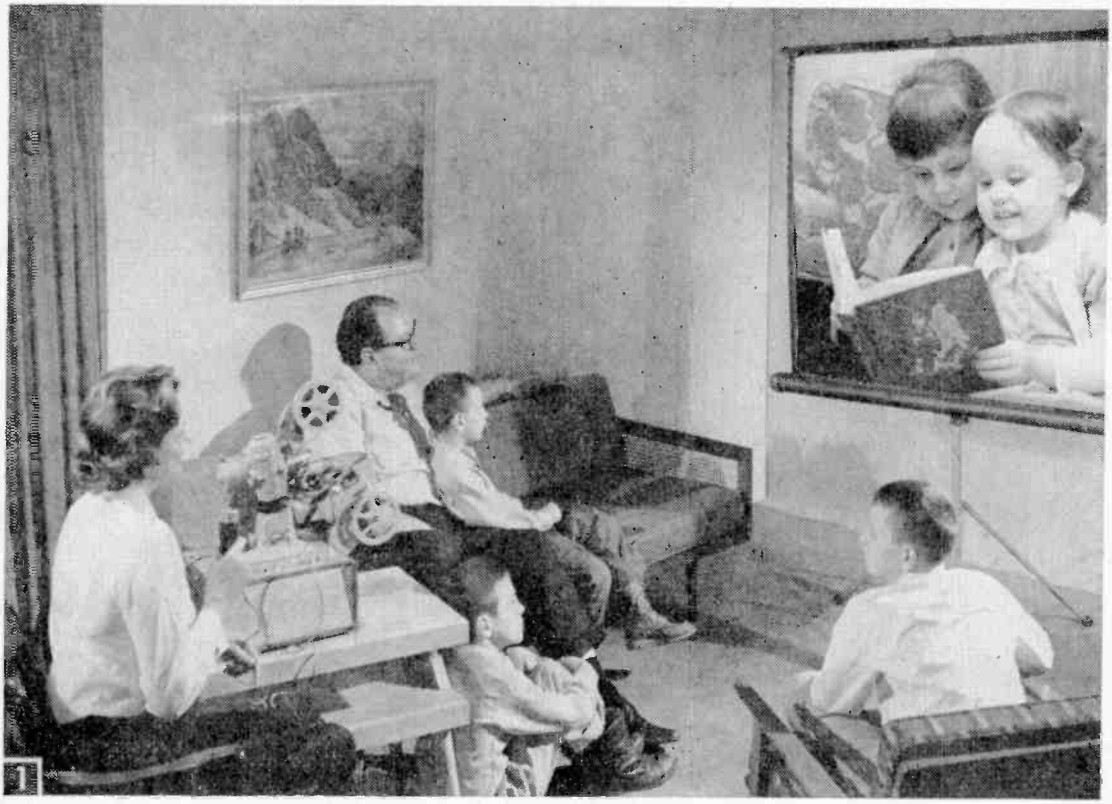
To make installation easier, especially if you are working alone, you may want to make temporary cabinet holding spacers of scrap 1 x 2-in. stock. Cut to exact length, they will help you locate the cabinets in the right spot while you install the screws.

Finish colors are a matter of individual choice and matching to decor and furniture already in your room. You can finish the Masonite door panels in bright accent colors, using enamel or lacquer and proper primer or undercoat. Follow your paint dealer's recommendations. To prevent warpage from uneven moisture absorption, always finish both sides of a Masonite panel with the same kind of paint or lacquer. Speaker extension lines and connections between the hi-fi units can be run through the aluminum poles. Power lines should not be installed in the poles unless you pay particular attention to shorting hazards such as sharp corners and tight bends. If you wire your ac lines within the poles, use the best grade of cable, with grommets and strain reliefs at point of entry.



**Manufacturer of new 8-in. portable table saw is American Machine and Tool Co., and price including motor is under $50. Saw produces close cuts on panels.**

5



Once you see—and *hear*—a sound movie with commentary, music, or lip sync voices of your family and friends, silents forever after seem dull.

# SOUND MOVIES

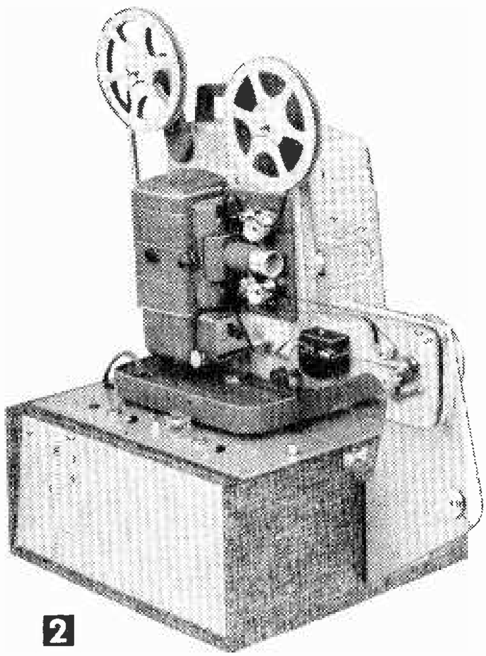
NOW you can convert your 8-*mm* silent movies to sound, right at home, with an easy-to-use $75 attachment that provides all the features of sound projectors costing $250 or more.

The sound is recorded on a stripe of magnetic oxide along the edge of the 8-*mm* film. The system works in the same way as a tape recorder; the film passes over a recording head that converts speech or music to a magnetic recording. You can shoot your movies with pre-striped film, or the stripe can be added to movies already developed and edited, making sound movies out of your old silents. And best of all, the cost is only one quarter that of 16-*mm* sound.

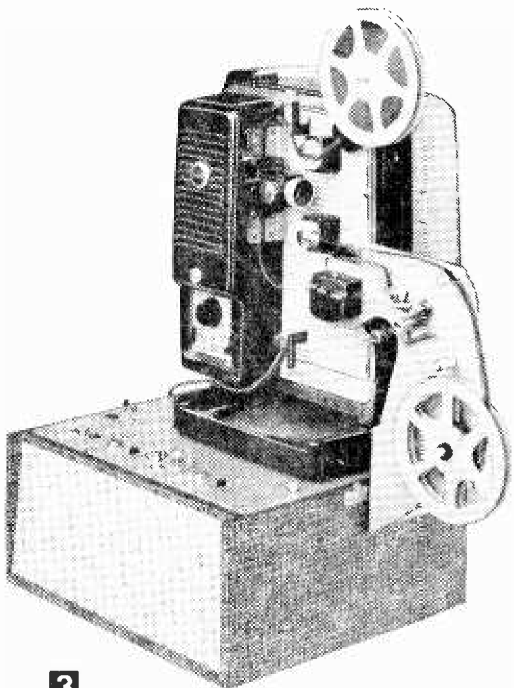
The sound attachment (Fig. 1) has been tested on dozens of different projectors, some of them over 20 years old, and will produce quality results with all but a few very early makes. The chassis bracket is designed so that it can be used equally well with both basic styles of projectors—those with reel arms at the front (Fig. 2) and those with arms arranged overhead front and back (Fig. 3).

**No Sync Problems.** Because the sound track is right on the film, there is no problem in synchronization. You can record and play back at any projection speed that gives you the right screen action. All of the mechanical parts usually built into an expensive 8-*mm* sound projector are mounted on the chassis bracket (Fig. 5). The film passes through the projector aperture gate, then feeds downward past a roller and over the record-playback head. Next it is pulled between a capstan and pressure roller. The purpose is to pull the film through at uniform speed and to isolate the recording-playback section from the normal intermittent action of the movie projector.

Next, the film passes over a tension roller, feeds back up to the projector's takeup sprocket, then goes on to the takeup reel. Threading is easy—no more difficult than the threading of any sound projector. A youngster can do it rapidly after trying it a few times.



2



3

The S&M Cine-Sync attachment fits both basic types of projectors, whether reels are above the projector (left) or are placed in front of the lens (right). No mechanical alteration of your projector is required to use the kit.

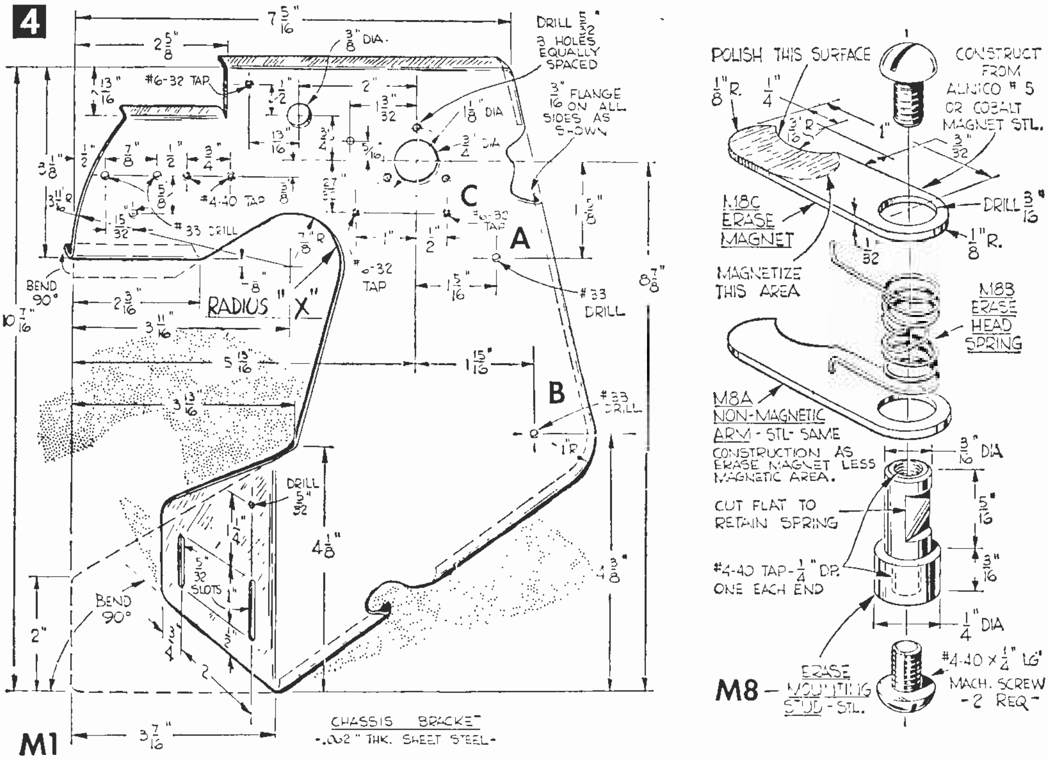
# from your silent projector

**Astounding attachment fits any 8-*mm* projector, records and plays full-sync sound on magnetic stripe**

**By LOWELL WILKINS**
Inventor of the Fairchild Sound Camera
**and LEO O'ROURKE**
Electronics Engineer

The record head is connected to the amplifier case and all controls and jacks are conveniently located on the top panel. For storage, the chassis bracket can be unscrewed from the side of the amplifier case and placed within the cover (Fig. 6). Inside the case is a 5-watt printed circuit amplifier, and a 4-in. speaker. Jacks feed out to the microphone, record head, phono input, and external speaker.

You can build the complete unit, machining the parts and wiring your own amplifier, or you can buy a Cine-Sync kit ($74.95, S&M Kit Division—see Materials List). To machine your own parts, you will need a metal-working lathe capable of good accuracies. The most critical parts are the recording head, which must be properly aligned with the film track, and the flywheel assembly, which must be mounted in bearings to permit free turning.




**The Assembly Instructions** that follow apply whether you make your own parts or use the kit. To simplify assembly, lay all parts out on a table and use masking tape or tags to identify each item according to Figs. 4, 5. The record-playback head is pre-aligned; its magnetic gap is precisely lined up with the film track. Do not tamper with the head other than to mount it to the main chassis bracket (Part #M1) with 4-40 x 1/8-in. round head (*rh*) machine screws, feeding through from the rear. Mount the flywheel bearing retainer (Part #M2) with three 6-32 x 3/8-in. *rh* machine screws.

Insert 5/8-in. *od* internal retaining ring M2A in groove of flywheel bearing retainer M2. Insert two ball bearings (M2B, M2C) in the flywheel bearing retainer. Place retaining ring M2D on capstan shaft M2E in groove provided. Insert capstan shaft through the bearings from the front of the chassis panel and slide the flywheel (M2F) onto the shaft from the rear. Place grommet M2G on capstan shaft back of the flywheel, and secure in place with 8-32 x 3/8-in. machine screw. Purpose of the grommet is to act as a slip clutch, which allows the capstan to turn before the flywheel builds up to full operating speed.

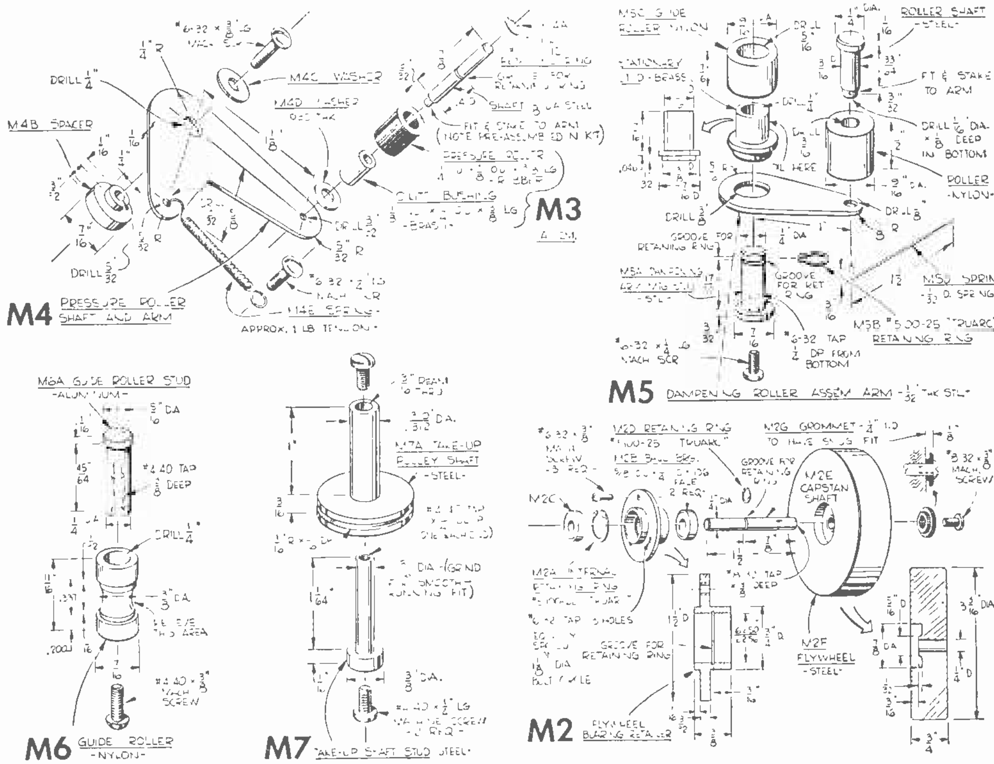
**Place Steel Washer** M4D on the shaft of pressure roller shaft and arm M4. Next, oil the bearing of the pressure roller assembly M3 lightly and place on M4. Press the retaining ring, M4A, into the ring groove that keeps the roller in place.

Place washer M4C over a 6-32 x 3/8-in. pan head screw. Pass the screw through the hole in the pressure roller arm, then through pressure roller spacer M4B, with small end of spacer up, and screw into the tapped holes in the chassis panel. Attach spring M4E to the pressure roller arm and let it hang.

Mount the dampening arm mounting stud M5A to the chassis with a 6-32 x 1/4-in. pan head screw from the rear. The brass bushing of the sound dampening arm assembly must be lightly oiled. Then lower it over the mounting stud, add nylon dampening guide roller M5C, and press on retaining ring M5B to fasten the assembly. Insert spring M5D in the hole in the bottom of the dampening arm from the rear of the chassis, feeding through the 3/8-in. chassis hole.

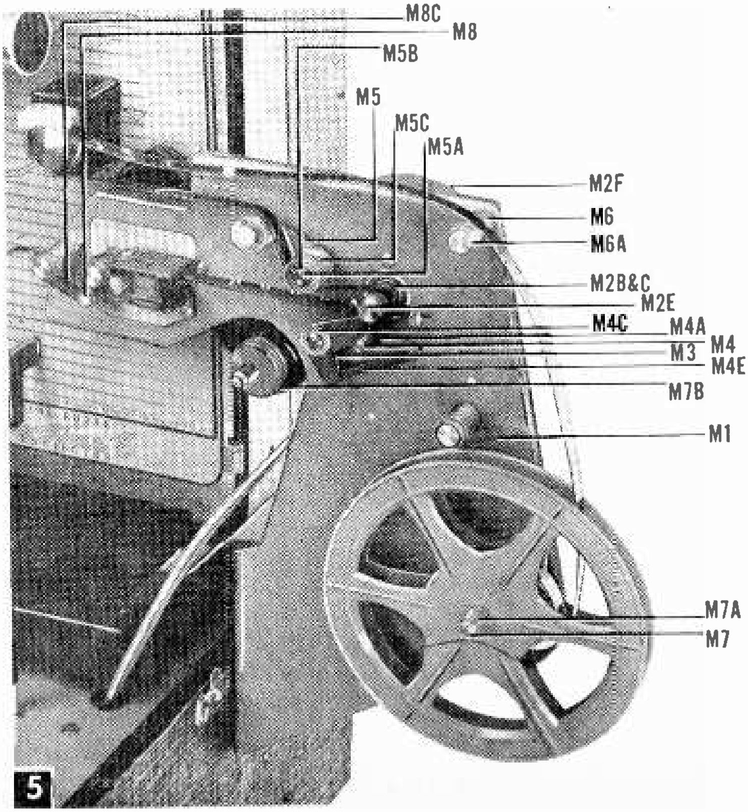
**Lock the Spring** in place with a 6-32 x 1/8-in. pan head machine screw. The dampening arm guide roller and shaft are supplied as preassembled kit parts.

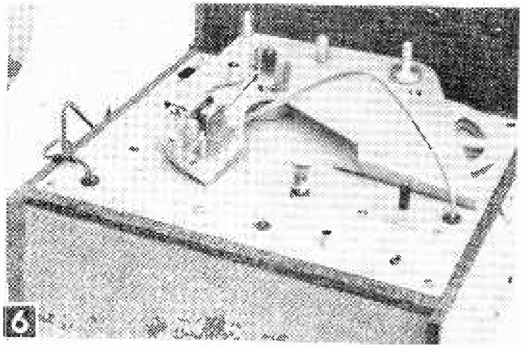
Install three guide rollers (M6) and guide roller shafts (M6A) as shown in Fig. 5. Install each roller by fastening the shaft from the back of the panel with a 4-40 x 3/8-in. pan head machine screw. No washer is required,




## Parts List, Chassis Bracket Assembly

| Part No. | Size and Description |
|---|---|
| M1 | chassis bracket |
| M2 | fly wheel bearing retainer |
| M2A | internal retaining ring 5/8″ od Truarc #5000-62 |
| M2B, C | ball bearings, New Departure—#77R4, 5/8 od x 1/4 id x .196″ |
| M2D | #5100—Truarc retaining ring |
| M2E | capstan shaft |
| M2F | fly wheel |
| M2G | grommet, 1/4″ id to fit 3/8″ hole, 1/16″ panel |
| M3 | pressure roller assembly |
| M4 | pressure roller shaft and arm |
| M4A | #5100-12 Truarc retaining ring |
| M4B | pressure roller spacer |
| M4C | pressure roller washer |
| M4D | 1/8 id x 1/4 od x .035″ steel washer |
| M4E | spring |
| M5 | dampening roller assembly arm |
| M5A | dampening arm mtg. stud |
| M5B | #5100—25 Truarc retaining ring |
| M5C | dampening guide roller |
| M5D | dampening arm spring |
| M6 | guide roller |
| M6A | guide roller stud |
| M7 | takeup shaft stud |
| M7A | takeup pulley shaft |
| M7B | takeup projector pulley |
| M7C | 15″ takeup spring |
| M8 | erase mounting stud |
| M8A | non-magnetic arm |
| M8B | erase head spring |
| M8C | erase magnet |





The chassis bracket unscrews from the side of the case and the L-shaped base angle drops into the slot in the top of the panel plate. The entire mechanical chassis assembly fits inside carrying case cover.

because these nylon rollers create no surface friction.

A fourth M6 and M6A roller assembly will be needed at point A (Fig. 4) if your projector (Fig. 2) has the takeup arm at the upper rear. Projectors with both reel arms in front require an auxiliary belt-driven takeup shaft at point B (Fig. 3). Fit takeup shaft stud M7 to chassis panel with a 4-40 x ¼-in. pan head machine screw. Oil the takeup pulley shaft M7A, place it over the stud, and retain with a 4-40 x 3/16-in. pan head machine screw.

Attach erase magnet mounting stud M8 to chassis with a 4-40 x ¼ in. pan head machine screw. Place the non-magnetic pressure arm M8A over the mounting stud and put the spring M8B over the stud. Then put the magnetic erase M8C (erase head magnet with red stripe) over the spring. Retain with a 4-40 x ⅛-in. pan-head machine screw.

Install a 6-32 machine screw in hole C in the chassis bracket to hold the other end of the pressure roller spring. The pressure roller arm spring should not be fastened in place until you are ready to use the unit and should be detached when not in use to keep the rubber roller from flattening.

**Wiring the Amplifier.** The 5-watt record-playback and PA amplifier is designed to be wired on a 4 x 8½-in. printed circuit board that fastens to the top panel of the amplifier case (Fig. 6). You can obtain the amplifier completely wired or order a ready-to-wire kit complete with pre-punched panel, printed circuit board, and all parts. If desired, the advanced electronic hobbyist can order such parts as the circuit board, recording head, function switch, oscillator coil, and transformers separately. All other parts are stock electronic items.

Start construction by laying out all parts on your work table. Identify each resistor by color code value. You will need a small pencil-type soldering iron, a diagonal pliers, and a long nose pliers. Wire the bottom deck function switch connections first, including two 6-in. leads which feed out to the mike jack. *These mike leads must be shielded single-strand cable.* Also connect the head lead. This must be stranded *twin conductor shielded cable,* the kind used for stereo pickup cartridges. For forward arm projectors, you will need a head lead 16 in. long; upward arm projectors require an 8-in. lead cable.

Mount the function switch on the printed circuit chassis. Then mount the output transformer, electrolytic capacitors, tube sockets, volume control, and oscillator coil.

EDITOR'S NOTE . . . **about the author**

Lowell Wilkins, president of Cinemagnetics, Inc., has been working in the field of photography and sound recording for 25 years. After 10 years of research he announced in 1950 the first self-contained magnetic recording 16-mm camera, the Cinefonic. Priced at $2000, the camera was widely accepted by newsreel cameramen and TV stations. Compact assembly made truly candid newsreel coverage possible for the first time.

In 1958, Wilkins developed the revolutionary Fairchild 8-mm sound camera ($249). Thousands of these units are now used by amateur movie makers, and in audio visual sales and training programs.

Since 16-mm movies require four times the film area, 8-mm sound movies can now be made for one-fourth the former cost. Wilkins predicts further cost reduction. He has perfected 8-mm and 16-mm combination camera-projector units that use a common mechanism and lens for shooting and projection.

The project described in this article was developed specially for the Kits Division of SCIENCE and MECHANICS. Dimensions of the film stripe and the film gate-to-head distance are according to SMPTE standard; thus, films recorded with this attachment are interchangeable with those made with commercial 8-mm magnetic cameras and sound recording projectors.

Author Wilkins also has invented a process for applying magnetic sound striping to Kodachrome and Kodachrome II film *before* processing. His laboratory is the only one in the United States currently offering this service.

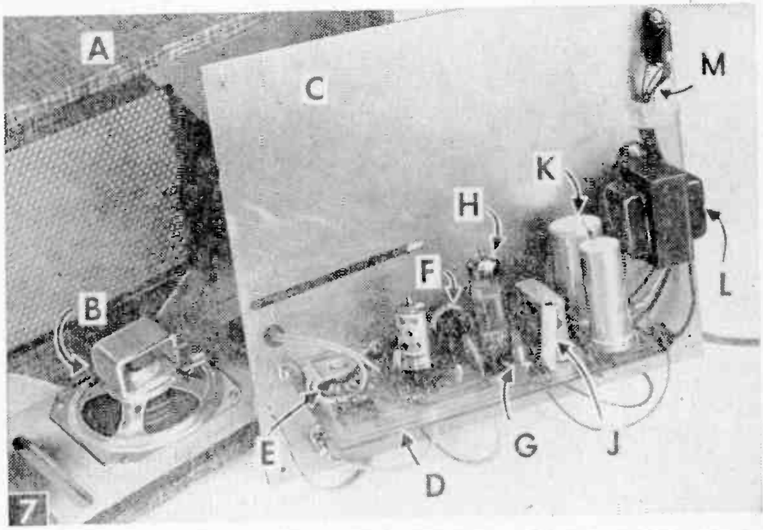
Wilkins Cinemagnetics laboratory offers other services: pre-striping of any unexposed 8- or 16-mm film; striping of customer's film after exposure; reduction printing (16 mm to 8 mm); striping of existing sound films, and the re-recording of duplicate films. His lab also supplies rental 8-mm sound films—educational, sport, entertainment and cartoon.

. . . Bill McHugh

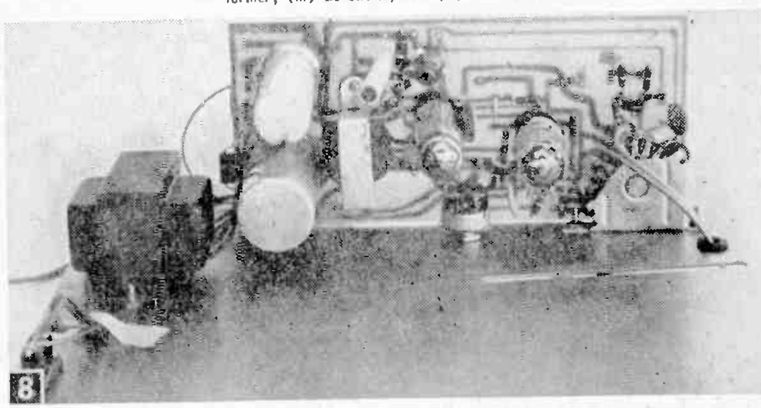
Parts supplied in the kit are printed circuit components designed to fit marked holes in the circuit board. Next, mount all resistors and capacitors. The technique is easy. Use a long nose pliers to grip the lead of the part; bend it to fit into the proper holes and feed through. Then bend the leads over at a right angle. Cut so a bend about 1/16 in. long remains on the circuit side of the board.

After all parts are mounted, solder each lead to the printed circuit board. Avoid overheating the joints . . . too much heat can cause the p-c wiring to strip from the base. Then fasten the board to the panel by means of the nuts on the volume control shank and with two 6-32 x 1/4-in. pan-head screws and nuts. Mount the power transformer on the panel; insert grommets for line cord and record head cable and to hold the neon indicator lamp. Mount the phono jack, mike jack, external speaker output jack, and the ac outlet for the projector. The record head cable terminates in two miniature clips that connect to the head. Solder cautiously to avoid flowing solder into the spring contacts. Tie in the speaker, and wiring of the amplifier is complete.

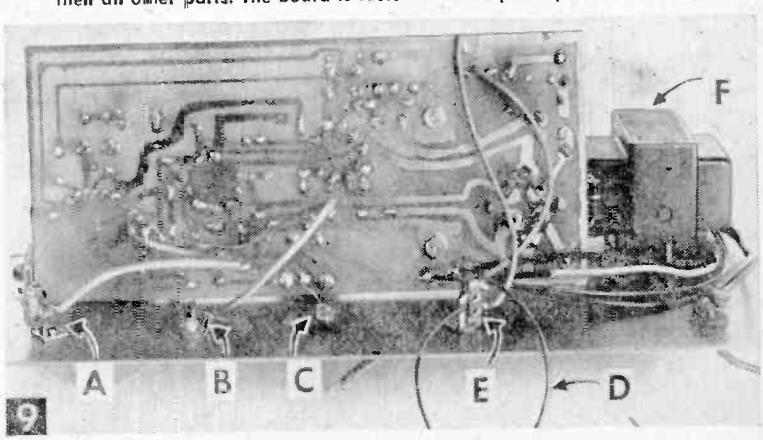
**Amplifier Test.** After checking your wiring, test the amplifier with ac power. Turn volume control wide open with your switch in playback position. A plain hiss should be heard. If you hear a loud hum or no sound at all, recheck connections.



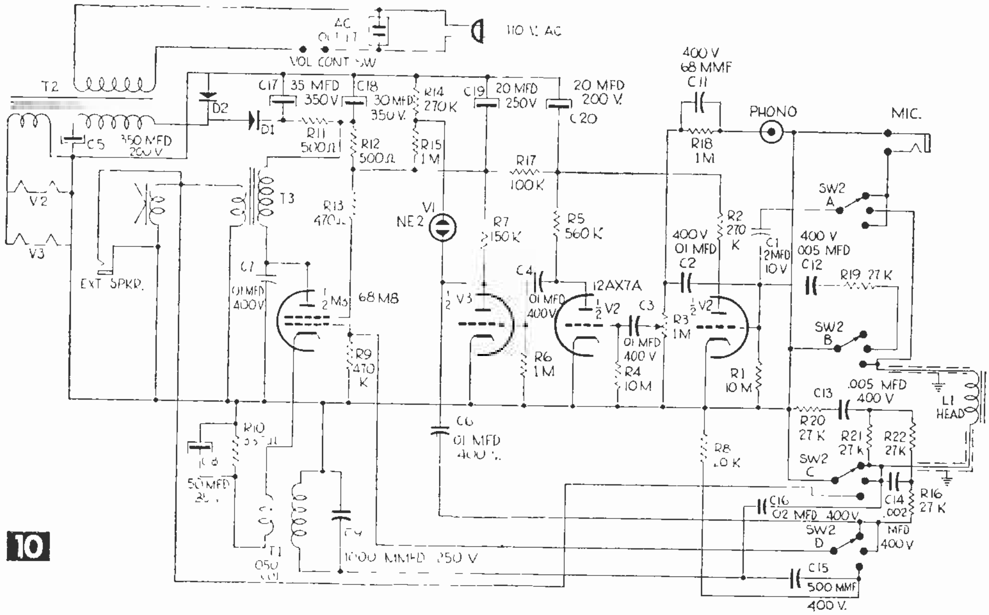

Inside view shows all electronic parts mounted on the printed circuit board except the transformer and ac receptacle. Parts shown are as follows: (A) case; (B) 4-ohm speaker; (C) panel plate; (D) circuit board; (E) mode switch; (F) volume control; (G) oscillator coil; (H) 6BM8 tube; (J) output transformer; (K) filter capacitor; (L) power transformer; (M) ac outlet, and (N) head lead.



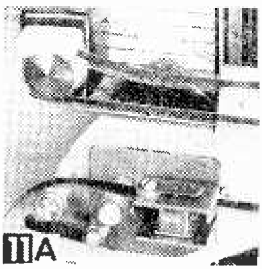

Looking down at top side of printed circuit board. Wire the function switch first, then all other parts. The board is fastened to the panel plate at the last.



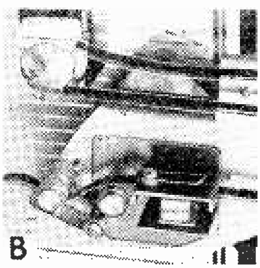

Bottom view of printed circuit board shows how this design makes wiring easy. Connections to the board are as follows: (A) mike input; (B) phono input; (C) volume indicating lamp; (D) internal speaker; (E) external speaker, and (F) power transformer.




**10**



**11A**



**B**

**Here's how you thread the film for normal playback (top). The magnetic stripe passes right over the record head gap. To erase (bottom), you feed the film under the magnetic erase arm.**

**MATERIALS LIST—CINE-SYNC SOUND ADAPTER**

| Part No. | Size and Description |
|---|---|
| T-1 | oscillator coil Cinemagnetics #C01 |
| T-2 | power transformer, Cinemagnetics PT 2 #6.3 fil, 115 v |
| T-3 | output transformer, Cinemagnetics OT3 |
| SW-2 | 3 position, 4 pole rotary switch Cinemagnetics #SW-2 |
| D1, D2 | silicon rectifier, 400 PIV |
| | **Resistors** |
| 1 ea. | ½ watt carbon resistors R1 10 meg; R2 270K; R4 10 meg; R5 560K; R6 1 meg; R7 150K; R8 20K; R9 470K; R10 330; R13 470; R14 270K; R15 1 meg; R16 27K; R17 100K; R18 1 meg; R19 27K; R20 27K; R21 27K; R22 27K |
| 1 ea. | 2 watt carbon resistors R11, 500 ohms; R12 500 ohms |
| 1 ea. | R3 1 meg audio taper volume control with printed circuit connections with ac power switch and support lugs |
| | **Capacitors** |
| C17, 18, 19, 20 | 4 section electrolytic 35 mfd 350; C18 30 mfd 350v; C19 20 mfd 250v; C20 20 mfd 200v |
| C5 | 350 mfd 200v |
| C8 | single section electrolytic—50 mfd 25v |
| 1 ea. | disc type ceramic capacitors, C1 .2 mfd-10 v; C2 .01 mfd; C3 .01 mfd; C4 .01 mfd; C6 .01 mfd; C7 .01 mfd; C9 1000 mmf; (C10 omit) C11 68 mmf; C12 .005 mf; C13 .005 mfd; C14 .002 mf; C15 500 mmf; C16 .02 mfd |
| V1 | Ne 2 neon lamp or equal |
| V2 | 12AX7A tube |
| V3 | 6BM8 Amperex ECL-82 |
| 1 ea. | phono jack for phone input Switchcraft #3501 FP |
| 2 ea. | midget phone jacks, single circuit for mike input and speaker output |
| 1 ea. | Cinch Jones #2R2 a-c power outlet |
| 1 | L1 Cinemagnetics record-playback head 700 ohm impedance at 1000 cycles 85,000 ohms at 85 kc |
| 1 | printed circuit panel, Cinemagnetics #PC-1 $2.00 |
| 1 | top panel, 10 11/16 x 12 7/16 x 1/16" CRS |
| 2 ea. | 9 pin printed circuit tube sockets, above chassis type |
| 3 ft. | two conductor twin shielded stereo phono cable |
| Misc. | tube shields for 12AX7, ac power cord, grommets, hook up wire, single shielded microphone cable, high impedance crystal mike |

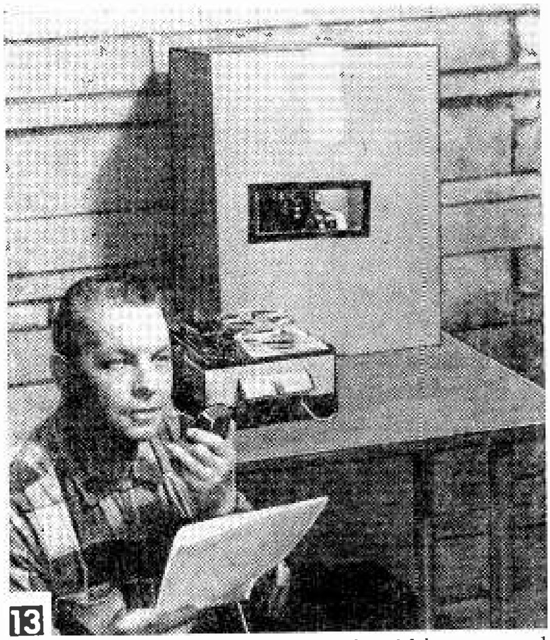
Next plug in the record head and touch the "hot" lead of the head with your finger. You should immediately hear a loud hum. Plug in the mike. The unit should operate as a PA system. You should be able to hear your own voice loud and clear. But keep the mike away from the speaker or a feedback squeal will result. The neon indicator should glow on speech with volume *up* and record switch *on*.

**Mount the Chassis Bracket** on the side of the amplifier case following Fig. 2 or Fig. 3, depending on which type of projector you have. Projectors with reels in front above and below (Fig. 3) generally are built higher and will require that you mount the adapter plate near the top of the amplifier case.

With your projector on top of the amplifier case, hold the chassis bracket so that radius X (Fig. 4-M1) is over the lower reel arm of the

12

Above, a gadget borrowed from Hollywood, is the clap board. Made of scrap lumber, it is used to establish the starting point of tape and sound.



13

Right, Ed Oswald, Cinemagnetics methods engineer, records travelogue description while he watches the movie. Projector is in sound blimp.

projector. This arm should not touch the chassis bracket. Mark the hole positions and screw the chassis bracket to the amplifier case.

Some projectors of this type (Fig. 3) were manufactured with a wooden base that you may have to remove if it interferes with the chassis bracket. Projectors with both reels on top (Fig. 2) will require that the bracket be mounted so the loop between aperture and gate will not interfere with any other parts.

Next connect your record head. Insert the head cable through the hole in the back of the chassis bracket. Fasten the clips on the lead wires to the two pins in back of the sound head. The shield of the cable must be grounded under one of the screws that mount the head to the mechanism plate.

Now thread a roll of striped 8-*mm* test film into the projector. Move the projector until the film feeds from the film gate to the record head in a straight line. Put two marks on a length of film *exactly 8⅜ in. apart*. This distance, the spacing from *aperture center* to the *gap* in the record head, is an SMPTE standard and must be maintained whenever you project, or your recordings will be off sync. Make a strip of paper this long and use it to set the spacing whenever you project or record. To record, remember that you must thread under the roller (Fig. 11B), which simultaneously erases the film. On play, the film must be threaded over the roller. *NOTE: Mis-threading will completely erase a precious, irreplaceable recording.*

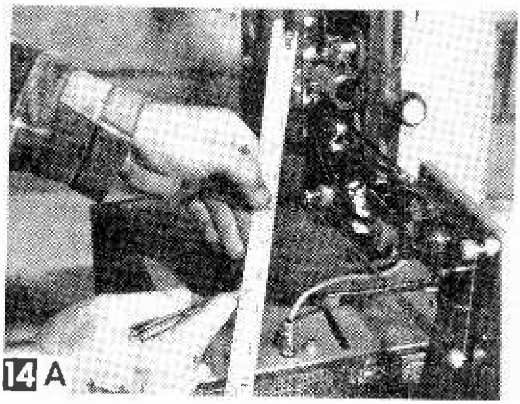
A few projectors have small metal arms intended to prevent improper threading. You may find it necessary to remove these arms or get them out of the way by twisting.

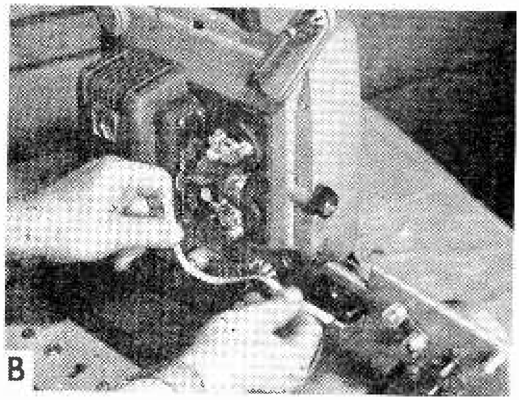
Turn the projector on, with volume half-way up. Immediately you should hear sound coming from the speaker. Try recording with a piece of striped film. Turn the switch to record, and thread under the roller. To get quality sound, it is important that you use just enough volume and not so much that you over-drive the record head. Talk into the mike and turn volume control until the neon indicator just starts to flash on sharp peaks . . . it should not glow continuously. Practice recording with several voices until you master the technique . . . later on you will be able to add sound effects and music.

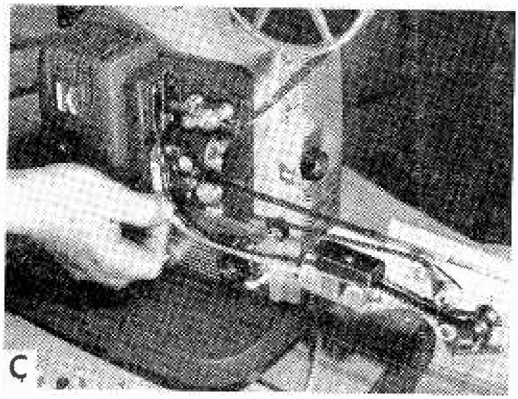
**Striping Your Film.** The magnetic stripe can be applied to 8-*mm* color or black and white film at any step in the movie-making process: before shooting, after development, or after splicing. Usually the most economical approach is to order film pre-striped, which you can do at most large camera-equipment stores.

If you shoot vacation trips or family events with your 8-*mm* camera, you may find that you discard a lot of footage when you edit your final movie. If your ratio of cuttings to finished film is 3 to 1 or more, you'll save by editing first, then taking your film to a photo dealer for striping.

**Splicing Technique.** If your edited 8-*mm* film is spliced with ordinary overlap splices (Figs. 14 A and B), you'll find that every time the splice passes under the playback head you get a "wow." If music is recorded at that place, the sound is objectionable. If the track is blank at the splice, there is no effect. If the leading edge feeds into the head (Fig. 14A), the effect is worse than if the overlap is underneath (B). The answer is to splice without overlap (Fig. 14C). *Quick Splice* tapes,




The length of film between sound head and film gate must be exactly 8⅜ in. (A). Cut a strip of leader stock exactly this length and use it as a gauge to check the spacing between projector and adapter (B). Whenever you thread your projector, check this spacing and the amount of slack in the film (C).

available in camera stores, are the answer, not only for sound film, but silent as well. As you edit, there is no delay in waiting for cement to dry; the splices consist of perforated tabs of *Mylar* plastic. The material is only 0.0015 in. thick, and as it passes through the projector, there is no effect on picture or sound, provided that you trim away the edge along the sound track.

**Sound Recording** is a well-refined technique in Hollywood studios. About 75% of the sound you hear in a professional movie has been added after the scenes were photographed. About 10% is prepared before photography, with only 15% sync-recorded on the actual set. This consists mostly of close-up scenes where you see the movement of the actor's lips and hear what he is saying at the same instant.

**Lip-Sync Recording.** The easiest way is to record sound at the same time the scene is taken. This can be done with a *Fairchild* 8-*mm* sound camera. These cameras are available for sale or rental ($5 to $10 per day) from the larger photo dealers. The second method is to use a tape recorder. You can record what was said while the scene was shot, then re-record the lines from a script, or you can add the taped sound in sync with the movie.

A clap-board (Fig. 12) is essential. Make it by hinging two 8-in. pieces of 1 x 2 lumber and fastening them to a piece of Masonite. Write the *scene* and *take* numbers on the board with chalk or grease pencil. Then, when you are all set to shoot, start the camera and the tape recorder. Have a helper hold the board in front of the camera, slap the boards together sharply, and say, "Scene 1, Take 1."

After the film is developed, it will be easy to recognize the single frame at which the boards came together. Then, by spotting that frame of film in the projector gate and placing the sound "clap" over the sound head in the tape recorder, you will be able to start projector and recorder simultaneously. If you have reasonably good equipment, the two units should stay in sync long enough for a short scene. If the two mechanisms do not accelerate at the same rate, simply note whether sound or picture is leading and make adjustments in the starting position of the tape over the record head until the sound is in sync.

If your projector has a variable speed control, you can "ride" this control to maintain sync. Or if not, you can slow down either the tape recorder or the projector by applying pressure to the tape capstan, or drive sprocket. A rheostat can be added to some 8-*mm* projectors to give you variable speed.

**Non-Sync Recording.** Often we watch a movie and hardly realize that the sound is not lip-synchronized.

Take a scene where a cowboy is galloping down the road and yelling, "Hi-O Silver."

It would be impossible to record clear voice over the sound of the horse. The sound cameraman may make a cueing record at the time of the take. The star, back in the sound studio, watches the scene on a projector and records the words at the right place. The sound of the horse might be simulated by pounding small wooden blocks in a box of gravel. Thus, the realism of your movie is limited only by your imagination. Use your tape recorder to experiment with sound effects. Keep a notebook on how you get the best results for certain sounds.

**Narrative Recording.** Another type of non-sync recording is typical of most travel movies. Recording is limited to vocal description and musical background. All you need is the adapter microphone and either a disk record player or tape recorder. Splice your film into the desired sequences first. Then prepare a script. Jot down the number of each scene, what it is, and roughly what you want to say. Also indicate the places where music will be added.

Be sure to preview your music before recording. Choose fairly fast passages, because they record well. Feed the output of the record player or tape recorder into the phono-input of the Cine-Sync amplifier. Set the Cine-Sync volume control at the proper setting for the mike. Then play a bit of the music and turn the volume of the record player up until the neon tube begins to flash. Then back off the record player volume until the neon indicator no longer flashes. Volume (and also fade-in and fade-out effects) must be controlled at the record player or tape recorder, because the adapter has only one control.

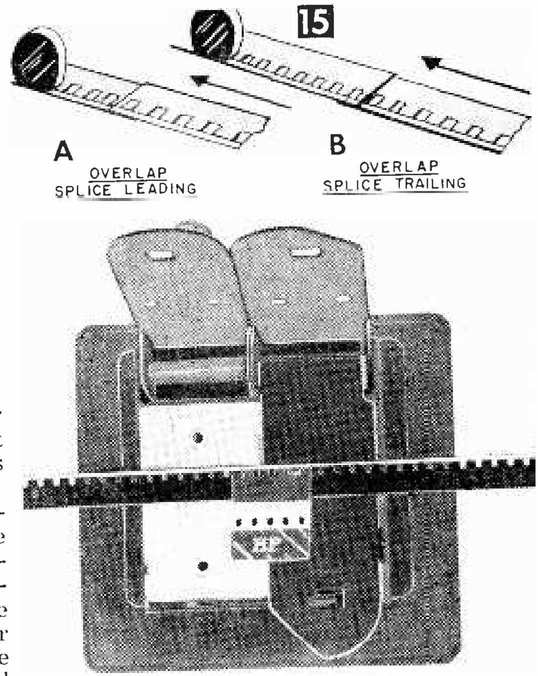
In shooting scenes to which sound will be added later, allow enough footage for sound track to describe them. In most cases, you'll find this time is longer than what you might shoot for a silent movie. Narration can eliminate the need for some scenes.

**"Blimping" Your Projector.** Since most 8-*mm* projector motors are noisy, the amateur producer may need a sound "blimp" to keep projector noise from being recorded.

A blimp (Fig. 13) can be easily made by obtaining a cardboard carton large enough to cover projector, adapter, and reels. Line the inside of the carton with foam plastic, rubber, or insulating material. On a line with the projection lens, cut a hole large enough for the light beam. Cement or tape two pieces of 1/16-in. Plexiglas on each side of the hole. To use the blimp, set all your projector and adapter controls beforehand. Use a 10-ft. length of lamp cord to run out a control switch so you can turn the projector on and off independently of the amplifier unit. The amplifier cord in the adapter is plugged directly into the wall so the tubes will not cool down while the projector is turned off.

**Mike Notes.** When recording with the Cine-Sync adapter, keep the mike as far away from the projector as possible. You can add up to 25 ft. of extension cable to the mike lead. When recording, avoid holding the mike so close to your lips that you pick up the sharp hissing and popping sounds found in some words. Move the mike out too far, and you pick up unwanted sounds. Do not record close to sound-reflective walls or windows.

15




Three kinds of splices. When the edge of an overlap splice leads into the record head (A) you'll get a "wow" if sound is recorded at that point. An overlap splice with joint trailing is better (B), but a butt joint made with Mylar tape splices (C) is best. This type of splice requires that you trim the splicing plastic so it does not cover the sound track.

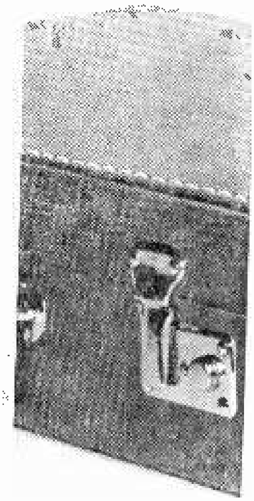
**Remote Speakers.** Did you ever notice that the sound in most movie theaters comes from behind the screen? A 4-ohm extension speaker placed under your projection screen will aid realism and quality to any sound recording. More than one remote speaker can be added. Two or more will give your movies a feeling of depth.

MATERIALS LIST—CINE-SYNC SOUND ADAPTER

| Amt. Req. | Size and Description |
|---|---|
| 1 | Cine-Sync 8-mm sound adapter kit. (A-8) including complete parts for chassis bracket; 5-watt ready-to-wire amplifier; record-play head; microphone; carrying case, and instructions. Postpaid, $69.95 |
| 1 | Cine-Sync 8-mm sound adapter kit (A-8W), including complete parts for chassis bracket; 5-watt, pre-wired amplifier; record-play head; carrying case; microphone, and instructions. Postpaid, $74.95 |

Send all orders to: Kits Div., SCIENCE and MECHANICS, Dept. 871, 505 Park Ave., New York 22, N. Y. Add $2 postage for all orders outside the U.S.A.


1



A

# The Little SCREAMER

**Here's a portable burglar alarm that protects your brief case, luggage, photo equipment, tape recorder, or tool chest**

By TOMMY THOMAS

THE moment a thief starts to pick up a valuable suitcase, an inexpensive mercury switch triggers a battery-operated alarm and makes him let go in a hurry!

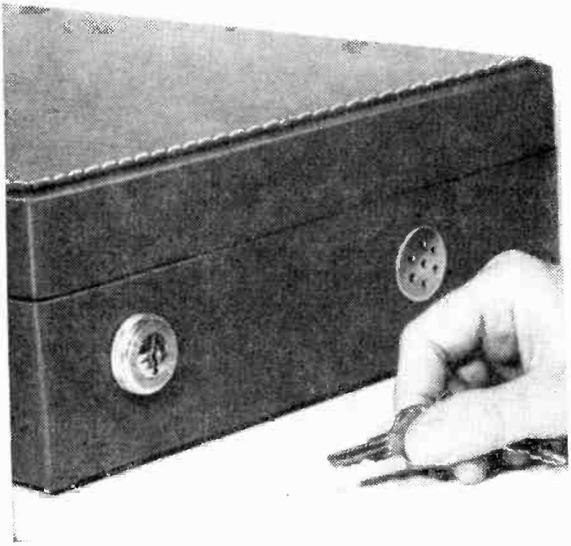
The idea could be adapted to dozens of unusual applications. You could install the switch and alarm to protect the contents of an automobile compartment that has no lock. Or it could protect surveyor's equipment and tools or contractor's material that often is left unwatched. It could guard merchandise on public display, be the basis of a novel party gadget, or protect your clothes and wallet while you go swimming at the beach.

The alarm requires no ac power, so it can be quickly rigged with a hinge and string to keep intruders out of summer cottages, tents, trailers, and boats.

It is essential that you keep the alarm installation a secret. In the photo case (Fig. 2A) a piece of thin board covers the entire assembly. Cemented above the board are a number of film boxes so there is no inside evidence of anything unusual. To complete the camouflage, paint both the keyhole assembly and sound vent cover to match the case covering. A screened vent lets out maximum sound.

A second design (Fig. 3) requires that the fire alarm buzzer be reversed in its original case. Chisel a hole and solder the alarm in place. This also makes a necessary electrical connection. For peace of mind with this alarm idea, get in the habit of glancing at your switch before you yourself pick up the case. Even if you are the owner it could be embarrassing if the alarm went off.

Assembled as in Fig. 2B, the unit occupies less than 2½ x 8 x 2-in. of space. Length of



Turn the key and the alarm is activated. The perforated metal insert is an electronic vent plug.

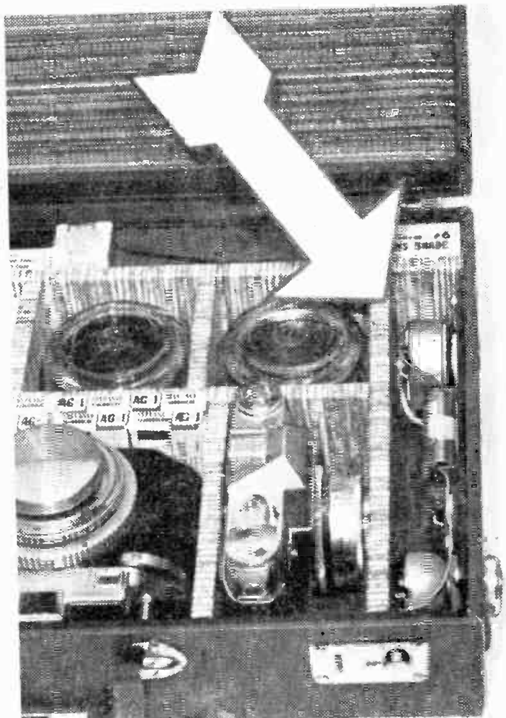
the wires is not critical, so you could scatter-mount the parts to make the installation even more space-saving.

Key parts (see Materials List) are often available locally, with one exception, the *Merlite* fire alarm buzzer. A number of other low voltage bells and buzzers were tested, but they just aren't loud enough to be heard on a crowded train or on a busy street. The Merlite alarm really screams enough to scare any thief.

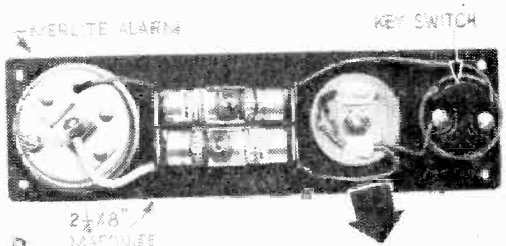
Start planning your installation by taking note of the operating position of the mercury switch. This switch is gravity sensitive, so its mounting angle will depend on the style of case. It must be located so that it will be *off* when the case is flat. When the case is picked up, the switch angle will change, causing the mercury to flow in the switch to the contacts and turn the circuit on. In most mercury

## MATERIALS LIST—LITTLE SCREAMER

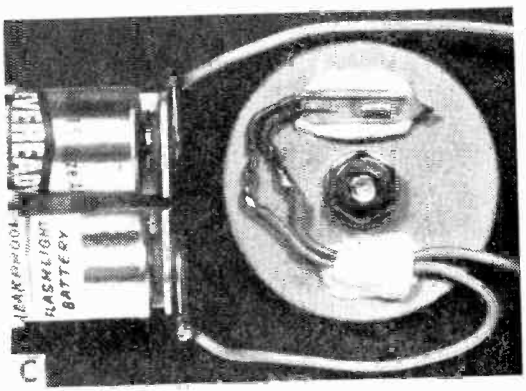
| Amt. Req. | Size and Description |
|---|---|
| 1 | Merlite fire alarm unit ($4.95. Merlite Industries, 114 E. 32nd St., New York 16. N. Y.) |
| 1 | micro-miniature mercury switch (Burstein-Applebee, 1012 Magee St., Kansas City 6, Missouri, #17A994) trigger |
| 1 | heavy duty lock switch with two keys (LaFayette, 111 Jericho Turnpike, Syosset, L. I., N. Y. #SW-75) shut-off switch |
| 1 | 4-position slide switch (Lafayette #SW-74) optional switch |
| 1 | battery holder, Keystone #140 |
| 2 | penlight batteries, Size AA |
| 1 | vent plug, punched holes, snap-in for 1" holes (General Cement #H334F) sound vent |
| 1 ea. | 1/8-in.-thick Masonite, 2¼ x 8" rectangle and 1½" circle (exact size not important) |
| Misc. | epoxy adhesive (heavy-consistency type), screws, nuts and washers, hookup wire, black electrical tape |



2 A

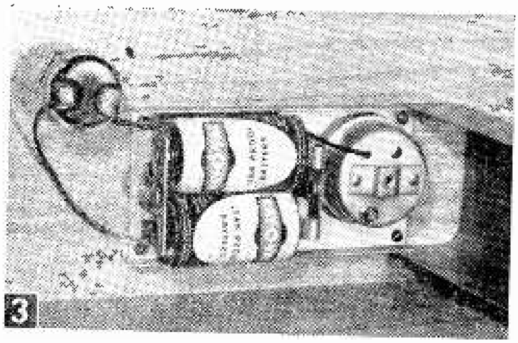


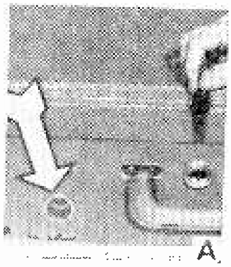

B




C

This camera case installation is under a lid that looks like a film box. 2B shows complete installation seen from inside of case. 2C shows epoxy adhesive holding mercury to switch and leads. Also use it to fasten buzzer to masonite.





For a larger case, you can use the entire Merlite fire alarm case. Cut a hole in the case and solder the buzzer in backwards so it faces out.

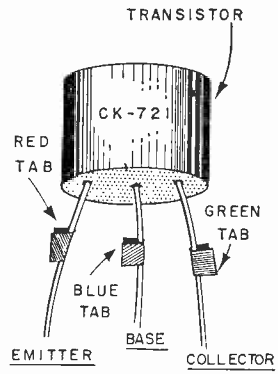
switches, the contact wires are of different lengths. For greatest sensitivity of mercury movement, plan to mount the switch with the shorter wire on the down side.

Mount the mercury switch on a 1½-in. disc of *Masonite*. One good method is to imbed it in a gob of epoxy cement. Wiring can also be anchored down in the same way (Fig. 2C). Then fasten the disc to the case or panel with a wood screw or machine screw and nut. By rotating the disc, you can set the alarm for any trip angle desired.

Action of the brief case alarm (Fig. 1) depends on the fact that normally the thief will grab the case by the handle. If the case was picked up upside-down, the alarm would be rendered useless. This probably would never happen, but on other types of cases, you could beat this problem by installing more than one mercury switch in the circuit. Mount them in facing angles and wire in parallel, so the equipment will be protected no matter how the case is picked up.

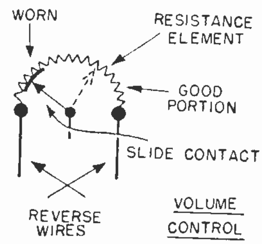
The lock switch (Fig. 1) is unusual in that the key can be removed in both *on* and *off* positions. Any SPST switch will serve as well, but it must be quiet acting and inconspicuous. You might conceal a slide or miniature switch somewhere on the outside of the case where it isn't likely to be seen. On a tape recorder, the ideal place would be underneath when the tape unit is laid flat. Protecting feet usually keep such cases from touching ground so there would be plenty of room beneath for a switch handle. Four position slide switches are available (see Materials List) that would make it very hard for someone to discover the safe setting even if they know about the switch.

## Color-Code Transistor Leads




• Accidentally connecting the leads of a transistor to the wrong terminals in a circuit may ruin it. Prevent this costly mistake by color-coding each wire lead with a small tab of colored plastic gift-wrapping tape. Use red (hot) tape for the emitter, blue for the base, and green (cold) for the collector.—J. A. C.

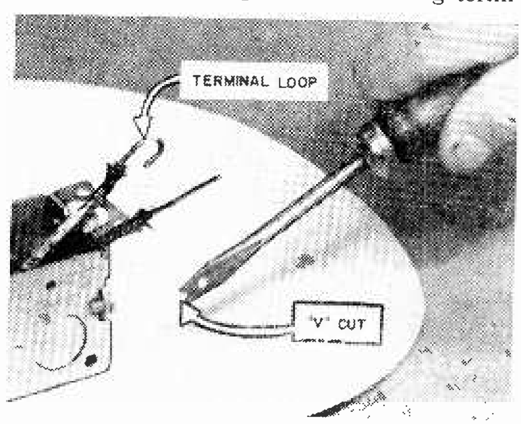
## Salvaging Worn Radio-TV Control




• When a volume, tone, or other radio-TV variable resistance control becomes worn and gives spotty operation that can't be eliminated with control cleaner, try reversing the two outer wire connections (see sketch). This will put the operating range of the control on the least-used portion that is still serviceable and salvage the control for further satisfactory use.—JOHN A. COMSTOCK.

## Electrician's Screwdriver

• Rework that spare screwdriver to make a more versatile tool that will still do a passable job of driving screws. Drill a small hole in it to use when shaping wire or forming termi-




nal loops on electrical installations. Then file a "V" in the blade edge to pull small nails and brads as when removing weather stripping, etc. The "V" is also a big help when stripping wire.—BIL TOMAN.

1

This Hallicrafters S-120 world-range receiver is a good example of the kind of equipment a DXer enjoys using.

# SHORT WAVE . . .
## *Electronics' Fastest-Growing Hobby*

By C. M. STANBURY II

WITHIN 10 years, short wave has progressed from a second-rate communications medium into a versatile and popular pastime. Before 1950, SW receivers were a novelty item, usually stocked only by dealers in amateur radio equipment; today they can be found in any large appliance store, and most smaller ones, as well.

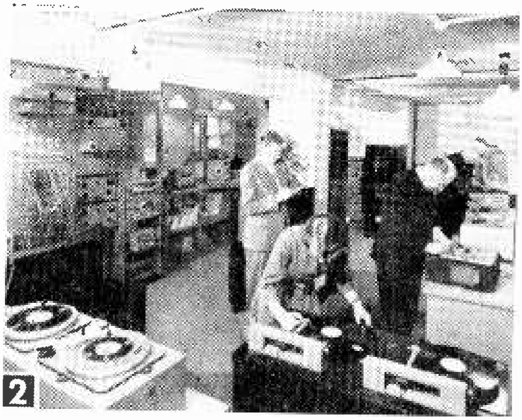
Why? First, short wave is, or can be, far more than a hobby. It represents a firsthand carrier of news from almost any part of the Earth—not to mention outer space, which is just now opening up for the listener. With the American public becoming more and more international-minded, SW is a gold mine of information.

Competition is another important feature, in digging for rare signals like those of Vostok II (DX) or, perhaps, the folk music of every nationality. If you are interested in a foreign language, this is your chance to hear it and practice your understanding of it.

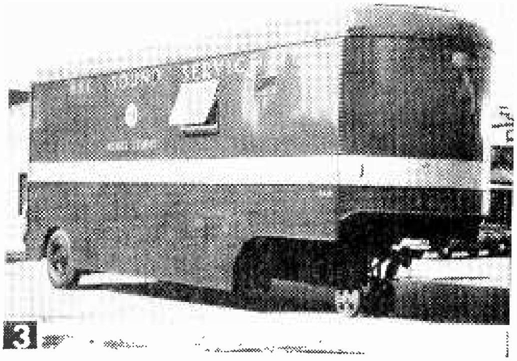
The possibilities are virtually endless. But in order to take advantage of them, you must know exactly what short wave is, and how it sounds and behaves: so let's start from there.

**Technically, Short Wave** simply refers to those frequencies between 3000 and 30,000 *kc* (3-30 *mc*). To understand where this lies in the radio spectrum, remember that the standard AM broadcast band runs from 535 to 1605 *kc*, the lower edge of TV channel 2 is 54 *mc*, and the FM broadcast band covers 88-108 *mc*.

SW signals often circle the globe, because of the ionosphere—a region of gases ionized by ultraviolet radiation from the Sun and extending from 50 to 200 miles up. The iono-



Most SW programs are taped in advance, but . . .



. . . the BBC does have occasional live news coverage.

sphere reflects (or, more precisely, refracts) radio signals; but the lower layers also absorb (and thus weaken) radio signals. Most distant signals below SW are completely absorbed, while signals above it usually pass right through into outer space: maybe they watch U.S. TV on Mars!

When someone mentions short wave, what do you think of—Voice of America, BBC, or Radio Moscow? Well, international broadcasters are the primary interest of many SWLs (short wave listeners), but there are literally thousands of other stations between 3 and 30 *mc*. Some, like radioteletype (resembling high speed Morse code), telephoto, and telemetering (except when it comes from outer space), represent just so much noise to the average listener. Other non-broadcast stations, however, including aeronautical, marine, and amateur, can provide many hours of fascinating listening.

**International Broadcasters,** ubiquitous and super-powered, are likely to be the first SW stations you will find. In addition to those mentioned above, they include such names as Radio Brazzaville in the French Congo, Portugal's Voice of the West, Radio Habana Cuba, Radio Peking, and many others listed in WHITE'S RADIO LOG (p. 194). All of these transmit programs in English beamed to North America, and because they use many frequencies at once they can nearly always be heard even on the simplest of receivers.

While many such stations operate solely for the purpose of propaganda or to promote a particular nation's tourist trade, they do present another source of news—a way to find out what other peoples or governments are thinking and saying about us. Then, too, much of the world's popular and folk music—the African drum beat, chants of the Near East, Oriental rhythms—can be heard via these powerful transmitters.

**DX Refers** to distant, difficult, and/or rare reception. It is an exciting sport and the key to successful short wave listening, for when the station that is "impossible" to hear *is* heard, stations that were previously difficult turn into easy and enjoyable listening. SWLs who DX are no longer limited to those super-powered jobs.

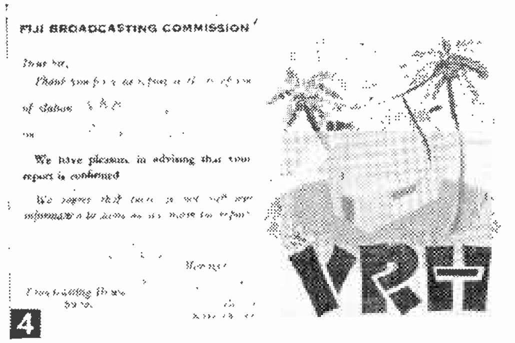
There are a number of factors which may make a particular SW station difficult to hear. First, absorption does not always stop at 3000 *kc*, but during the day affects frequencies up to 9 *mc*, and at night to about 6 *mc*. Upper short wave channels are also subject to "skipping": that is, they sometimes pass through the ionosphere like TV and FM signals using channels above 30 *mc*.

A final major factor is interference (QRM). Most short wave broadcast stations operate within nine narrow bands (see Table A), and 75% of all international activity is limited at present to four of these: 19, 25, 31, and 49 meters. This means that several stations must use the same frequency; for example, to log VTN2, Tarawa, Gilbert, and Ellis Islands, on 6050 *kc* during the early morning (EST) hours when absorption drops to a minimum is almost impossible, because HCJB, Quito, Ecuador, also uses the channel at that time.

Other less important considerations are low power, short schedules (on the air only a few hours each day), static on lower frequencies during warm, humid summer months, and ignition noise on the upper frequencies from passing autos, trucks, and buses.

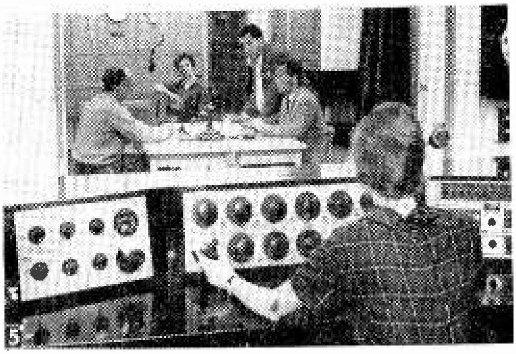
**If You Decide to DX,** you are not limited to short wave by any means. You may try for DX on any frequency range: the AM broadcast band, FM, or even on TV channels. Those interested in DX as a game often prefer non-SW stations, because of the greater challenge: imagine hearing London or Nicaragua right next to a local station!

You should keep a log containing the date, time, frequency, program description, and an account of reception conditions, for each new station heard. Most DXers then try to verify




4

QSL card from Fiji; best heard at present on 4755 *kc* (VRH5).



5

The British Broadcasting Corp. on the air. BBC is one of the most widely heard short wave broadcasters.

what they have logged. This is done by sending a report consisting of the data from your log book to the station, along with a request for confirmation—a QSL, as it's called by SWLs (Fig. 4).

Broadcasters can usually be addressed simply by name (Radio Centro, Radio Australia), city, and country. Always include return postage; if stamps of the particular country are not available, International Reply Coupons can be purchased for 15¢ at any post office. In addition to proving DX feats, QSLs provide the souvenirs that every world traveler likes to have to show the folks back home.

**Equipment.** It is possible, of course, to DX on any receiver and to listen to short wave on any radio that tunes between 3 and 30 *mc*, but once the listener really knows he's interested he'll want equipment that will give the best return for his efforts. Following is a list of features, approximately in the order of their importance, by which you should judge a receiver:

- COVERAGE. The receiver should tune all frequencies between 535 *kc* and 30 *mc*. It will do this by means of a band switch and at least one tuning knob. The dial should be divided into at least four bands: otherwise you will probably lose selectivity and/or good calibration.
- SELECTIVITY. This is the ability to separate stations on frequencies in close proximity; with bands so crowded today, this is extremely important. A top receiver will separate stations of equal strength only 5 *kc* apart.
- CALIBRATION. Good calibration means the ability to find exactly any desired frequency. This is best accomplished by the use of two dials. One, for main tuning, is placed at the top of a small desired segment of the spectrum, say 31 meters; the other is a fine scale known as bandspread, adjusted carefully until the right spot is hit.
- SENSITIVITY. How well a receiver pulls in those weak signals depends upon its amplification circuits. A quality superheterodyne receiver will apply at least one stage of amplification to the original frequency, convert it to an intermediate frequency (IF), and follow this up with two stages of IF amplification.

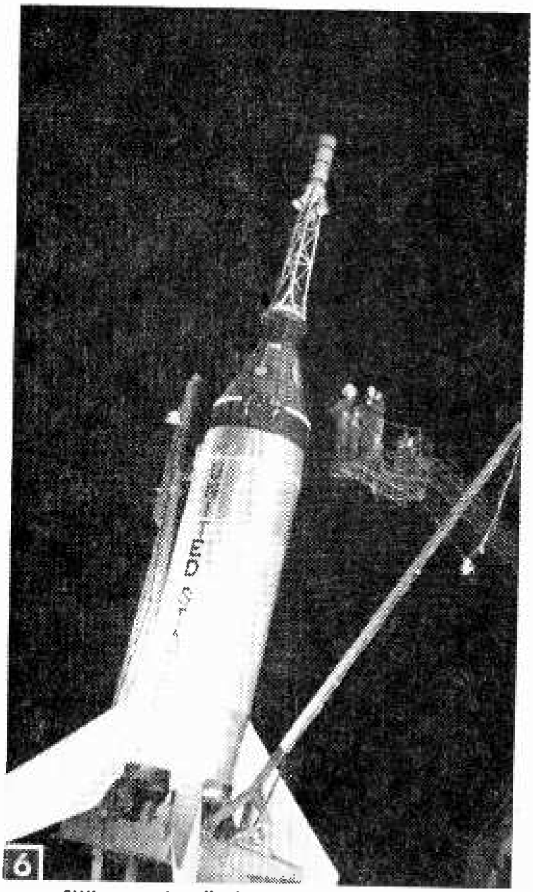
*After these there are some useful, non-essential features:*

- NOISE LIMITER. This is primarily effective against ignition noise.
- BFO. This is needed for most Morse code signals.

TABLE A—SWBC FREQUENCY-TIME CHART

| Meters | Freq. (kc) | Latin America | Europe-Africa | Asia | So. Pacific |
|---|---|---|---|---|---|
| 90 | 3200-3400 | Evening, 0600 | Sunset, 2400-0200 (Africa only) | 0500-sunrise | 0400-sunrise |
| 60 | 4750-5060 | Evening, 0600 | Sunset, 2400-0200 (Africa only) | 0500-sunrise | 0400-sunrise |
| 49 | 5950-6200 | Evening, 0600 | Late afternoon-0200 | 0330-sunrise | 0230-sunrise |
| 41 | 7100-7300 | None | Late afternoon-0200 | 0330-sunrise | None |
| 31 | 9500-9750 | Evening | 1400-0200 | Night | 0100-1000 |
| 25 | 11700-11975 | Late afternoon, evening | 1400-0200 | Night | 0100-1100 |
| 19 | 15100-15450 | 0800-2400 | 1200-2000 | Night if open | Night if open |
| 16 | 17700-17900 | Day | Day | Day | Day |
| 13 | 21450-21750 | Day | Day | Day | Day |
| 11 | 25600-26100 | Seldom Used at Present | | | |

Stations may be heard at hours other than those listed. Times are EST, except sunrise and sunset, which refer to listener's area.



SWLs occasionally log signals from space.

• AUTOMATIC VOLUME CONTROL. This saves wear and tear on the ears, keeps the neighbors happy.

How many of these features you wind up with, even of the major ones, depends on your budget. Assuming you buy a nationally known brand, you will get exactly what you pay for. One thing is sure: No amount of fancy gear can help a lazy or disinterested listener, while an eager and skillful operator can go a long way on comparatively little.

*Certain accessories can be added to your receiver at any time. The most important of these include:*

• Q MULTIPLIER. This increases selectivity via the IF circuits.

• CRYSTAL CALIBRATOR. If fitted with a 100-*kc* crystal, this will place a strong, steady reference signal every 100 *kc*. A crystal of any value may be substituted if other reference frequencies are desired.

Finally, you must have an antenna. It doesn't have to be elaborate: just make it as long and as high as possible.

**How to Listen.** Now you know what short wave is, what DX means, and what equipment is available. How do you make use of your information?

When a listener first discovers SW and/or DX, he should tune all the frequencies he can, and learn which parts of the world can be received on each band, and when. After this basic training, he is likely to become interested in specific projects—monitoring an unusual propaganda campaign, logging and QSLing a certain country, or bagging a particularly rare station. To tackle these challenges, a regular procedure must be followed.

First, find the right frequency. This can be done by using as guides stations heard regularly and whose frequencies are known. For example, if your target had been Radio Katanga, which used 11875 *kc* before its destruction on December 6, 1961, you would have checked WHITE'S RADIO LOG and found powerful XEHH in Mexico City, operating just 5 *kc* higher at 11880. Knowing that the best time for Africa on 25 meters starts at 1400 EST (see Table A), you would have checked the channel and kept checking it until all other African signals were gone.

**Did You Hear It?** The answer to that depends on you, your receiver, and how long you stayed at it—days, weeks, or even months. If you were fortunate enough to be using a first-class receiver, the channel was clear at least part of the time. With a less expensive model, you might have expected severe "sideband" QRM from XEHH, which you would have to listen through, using the following method:

Listen for the slightest trace of a signal beneath XEHH: then concentrate on it. After a while, what XEHH is saying will go in one ear and out the other—a real advantage when DXing. At the same time, you will be able to understand portions of the buried station's programming, and pick out its identification. In this case, maybe it turned out to be "Radio Katanga," an announcement which sounds about the same in Flemish, French, or English. (Fortunately, this is true of most identifications, especially after a little practice listening to the appropriate language. The article which follows this one, "Breaking the Short Wave Language Barrier," deals with this subject in detail.)

**Utilities.** Between short wave broadcast bands are the utilities, including aeronautical and marine services. Monitoring these requires a different approach. Unlike broadcasters, whose very existence depends upon a large number of listeners, utilities are not interested in being heard by the general public, and information on frequencies and schedules is much harder to come by: it is almost never announced over the air.

Identification of land stations is by location only, and you will have to listen a while to determine which service is which. There are many military stations with only tactical calls (Kilroy, Streamer, Creampuff One), and these are virtually impossible to identify.

Despite such obstacles, the utilities offer exciting, firsthand radio. Some SWLs were able to monitor John Glenn as he circled the Earth (15016 *kc*); many have heard rescue operations on the high seas.

In addition, numerous countries and islands not represented on the SW broadcast bands have either a marine or aeronautical station for you to log and verify. Utilities will often QSL, provided a prepared card is enclosed with your report for the operator to sign and mail back to you. Such locations are likely to be sparsely populated, and a report simply addressed, for example, to Officer in Charge, Seawell Aeradio, Bridgetown, Barbados, would probably be delivered.

**The 20 Best Utility Channels** are listed in Table B, along with some details on each. They can be found by trial and error, but are much more easily located with the aid of a crystal calibrator. Unlike broadcasting stations, utilities will often *work together* on the same frequency, and if conditions are right you should have no trouble making 20 or more loggings in one hour.

On these same channels you can hear the mobile stations—ships or aircraft, whichever the particular spot on the dial serves. Aircraft identify by airline and flight number, such as "Eastern 101" (Pan American flights, however, identify as "Clipper"); reports can be addressed to the most convenient office on the plane's route. American addresses are best, as U. S. stamps can then be used for return postage.

TABLE B—THE 20 TOP UTILITY CHANNELS

| Freq. (kc) | Use |
|---|---|
| 1755 | Royal Canadian Mounted Police |
| 2009 | Marine telephone, Calif. south to Galapagos |
| 2034½ | Marine telephone, Caribbean and Bahamas |
| 2182 | Marine, international calling and distress |
| 2670 | Coast Guard calling and distress frequency |
| 2716 | U. S. Navy |
| 2760 | Cuban navy |
| 2966 | Aeronautical, Caribbean |
| 8879½ | Aeronautical, South Atlantic |
| 8887½ | Aeronautical, South Pacific (no aircraft) |
| 8888 | Aeronautical, North Atlantic |
| 8913½ | Aeronautical, fringes of North Atlantic |
| 8930½ | Aeronautical, Near East |
| 8956 | Aeronautical, East Africa |
| 9018 | Cuban air force |
| 10021 | Aeronautical, Central America |
| 13284½ | Aeronautical, North Atlantic |
| 13304½ | Aeronautical, Far East |
| 13314½ | Aeronautical, western South America |
| 15016 | U. S. Air Force |
| 19995 | Soviet space vehicles |

Unfortunately, addresses for ships must be obtained from expensive reference volumes which become out-of-date all too quickly. Even when the address is known, the percentage of return on ships is very low.

One word of caution: *Do not repeat contents of messages.* To prove your reception (as program description does for broadcast reception), include the station called or contacted and, for a mobile, its position.

Now, to get you started, we've provided a pair of SWL/DX projects, neither too hard nor too easy, designed to test your qualifications as a listener.

**Project No. 1:** Iran, historically better known as Persia, the world's second oldest country. Today, because of its wealth of black gold, Iran is under threat of Communist subversion. In fact, Russia operates a clandestine, revolutionary radio station (approximately 11695 *kc* at 1200-1250 and 1330-1420 EST) just north of Iran's border, possibly at Tashkent.

Meanwhile, Radio Iran uses 7100 (give or take a couple *kc*) from approximately 2040 EST on for programs in Persian, and is readily spotted by the cry of a jackal transmitted before sign-off. Despite amateur QRM, Radio Iran is often heard at this time in the U. S.

Even rarer Persian DX is Radio Tabriz, a regional station not far from the Russian border, using 6175 *kc* (where there's plenty of QRM) starting around 2055. Radio Tabriz can be distinguished by its long periods of uninterrupted Near East music, and identifications which seldom come on the hour or half-hour. East coast broadcast band DXers fortunate enough to own top grade receivers should also watch for this one on 638 *kc*.

**Project No. 2:** 4VGM, Haiti's Magloire Broadcasting Circuit. When Paul Magloire was dictator of this Caribbean republic (from 1949 through 1956), M.B.C. was a top international broadcaster, with transmitters on 31, 49, and 60 meters, plus the broadcast band.

Today the giant has been laid low, and only operates on 1475 *kc*. The fact that many U. S. stations are using 1470 and 1480, and that two Central American transmitters—YNAG Radio Cosiguina, Chimendega, Nicaragua, and TIHCJ Radio Regional, San Carlos, Costa Rica—are on 1475 itself, makes this a tough one. But fortunately 4VGM appears on 2950 *kc* (multiple of the intended frequency). During the hours of darkness it can be heard throughout North America until sign-off at 2300.

M.B.C. programs are entirely in French, and consist mostly of Haitian music, which is quite distinctive. Reports should be addressed to M. Franck Cl. Magloire, who now owns 4VGM, and the address in Port-au-Prince is 38, Rue Americaine.

Good hunting.

## *Bothered by Foreign Lingo?*

# Here's How to Break the Short Wave Language Barrier

By DONALD N. JENSEN

PERHAPS the most frustrating problem encountered by the radio listener when he begins tuning the short wave bands is that presented by the language barrier.

While a number of the large international broadcasters devote a portion of their transmissions to English language programs, countless other radio voices seldom or never use the King's English. Since many of these stations behind the linguistic curtain are low-powered local outfits, they are tempting game for the DX listener. For the average person who speaks no "foreign language," however, logging these stations may seem to present insurmountable difficulties.

But this need not be the case. A very little study time and a few "tricks of the trade" can soon have you logging and verifying non-English-speaking stations. The two problems involved are (1) identifying the station you are listening to, and (2) obtaining sufficient data on the programs you hear so that you can write a reception report to the station and get that rare *QSL* card.

**Identifying the Station.** Let's say you are listening to a station in the 60-meter band. It is difficult to know the exact frequency, but you believe your dial is tuned to about 4940 kilocycles. You have been listening to a program of enjoyable music for 10 minutes or so, when a man begins to announce. He could be speaking Martian for all you know . . . it's all "Greek" to you.

After a few minutes of careful listening to this garble of sounds you begin to pick out an occasional word if you can call it that, for these words are meaningless to you. The announcer pauses and then continues. What was that? You catch what sounds like, "eesee ahbeedjohn." Ah, you begin to see a bit of light through a chink in the language barrier. You remember that "eesee" is actually

**6-LANGUAGE TRANSLATION CHART**

| English | French | German |
|---|---|---|
| This is . . . | Ici (ee-see) | Hier ist (heer ist) |
| Radio station | Radiodiffusion (rahdyo-deefeez-yohn) | Rundfunk (roond-foonk) Kurtzwellensender (kurts-welen-zendair) |
| Transmitter | Emetteur (aim-et-tour) | Sender (zend-air) |
| Short wave | Onde courte (awnd-koor) | Kurzwelle (kurts-vel-ah) |
| Kilocycle | Kilocycle (keelo-seekl) | Kiloherz (keelo-hairtz) |
| Frequency | Frequence (Fray-kawns) | Frequenz (fray-kwents) |
| Wave length | Longueur d'onde (lawn-gyour dond) | Wellen lange (velen-lahn-gah) |
| Frequency band | Bande de frequence (bahnd d-fray-kawns) | Frequenzband (fray-kwents-bahnd) |
| Program | Programme (praw-grahm) | Programm (pro-grahm) |
| Listener | Auditeur (oh-dit-tour) | Horer (huhr-air) |

the French word *ici*, meaning "this is."

"This is ahbeedjohn," the man said. That must be the French pronunciation of the word Abidjan, the capital city of the Ivory Coast, a French-speaking country on the tropical west coast of Africa. A quick check of your reference log shows that the short wave station at Abidjan does indeed transmit on 4940 kilocycles at this time. By golly, you've logged a new station and never once was an English word spoken.

**Logging Data for Reports.** Late in the evening, you've just tuned in a station that announces as "rahdyo-defuze-ora Venezuela." That's easy! It is YVKB, Radiodifusora Venezuela broadcasting in Spanish from Caracas. This business of careful listening and learning key words in several languages seems to be the ticket. You understand they have a fine *QSL* card, so you get pencil and paper to make some notes about program content for a reception report.

But what is the program about? You only know a few key words in Spanish. How can you get enough data on the program to convince the station's officials that you actually heard them?

Well, just listen again, carefully. What did he say? It sounded like "Khrushchev." You'd recognize that in any language! Then he mentioned "Kennedy," and now, "Katanga" and "Castro." He must be reading a news report. Names in the news sound much the same in many languages and stand out like a beacon in a foreign broadcast.

The announcer continues talking. He says something like "prograhm-ah day mew-sikah day ahmerika lah-tina." Latin American music, eh? Sure enough, the orchestra is beginning to play a cha-cha. Make a note of that for your report. It is followed by a tango; "El Choclo," you believe, is its title. Now they are playing that old favorite, "La Paloma." Note that, too. You seem to be getting quite a lot of detailed information for your reception report.

Thus, the fact that you speak only English need not be a handicap when you tune the short wave dial. But you don't have to stop here. Perhaps your interest is only whetted. You may make the plunge and actually try to learn one or more foreign language. Night school courses, books, and records are all available. Many short wave stations, themselves, offer language courses by radio from English to Hungarian, Russian to Spanish.

If you don't have the time or inclination to study, you may spend several sessions just listening to foreign broadcasts of the Voice of America or the British Broadcasting Corp. (B.B.C.). Before long you'll find you will begin to recognize the various languages by sound even though you cannot actually understand them. In time you will be able to recognize "by ear" the difference between such similarly sounding languages as Spanish and Portuguese, Arabic, and German, and many others.

So, listen carefully and you, too, can break through the language barrier.

**(Pronounce as Given in Parentheses)**

| Portuguese | Russian | Spanish |
|---|---|---|
| Aqui (ah-key) | Goverit (go-vuh-reet) | Aqui (ah-key) |
| Radiodifusao (rah-dyoh-defuze-sow) | Radyo (stantsiya) (rahdyo-stahn-tsee-yah) | Radiodifusora (rah-dyoh-defuze-ora) Estacion (ehs-tah-thyon) |
| Transmisora (trans-mees-ora) | Peredacik (pear-eh-dah-chek) | Transmisora (trans-mees-ora) |
| Onda curta (on-dah kur-tah) | Korotkaja volna (koh-roht-ka-yah wolna) | Onda corta (on-dah kor-tah) |
| Kilociclo (keelo-seek-lo) | Kilogercov (keelo-gair-kof) | Kilociclo (keelo-seek-lo) |
| Frequencia (free-kwen-seeah) | Castota (kahs-toe-tah) | Frecuencia (free-kwen-seeah) |
| Longura de onda (loan-gyour-ah day on-dah) | Dlina volni (dleen-ah wohl-nee) | Longitud de onda (loan-jeet-youd day on-dah) |
| Banda de frequencia (bahndah day free-kwen-seeah) | Diapazon castoti (deah-pa-shown kans-toe-tee) | Banda de frecuencia (bahndah day free-kwen-seeah |
| Programa (pro-grahm-ah) | Programa (pruh-grah-muh) | Programa (pro-grahm-ah) |
| Radio ouvinte (rahdyo aw-veen-tay) | Prijomnij ljubitelj (pree-yohm-nee lyoub-bit-elyee) | Radio Oyente (rahdyo aw-yen-tay) |

# Salt Water Powers Radio

**Battery made of scrap metal and a pill vial runs for months!**

By ROBERT E. KELLAND

The longer the antenna, the better the reception. Yet the test model worked all stations with a bench light reflector used as an antenna.

1

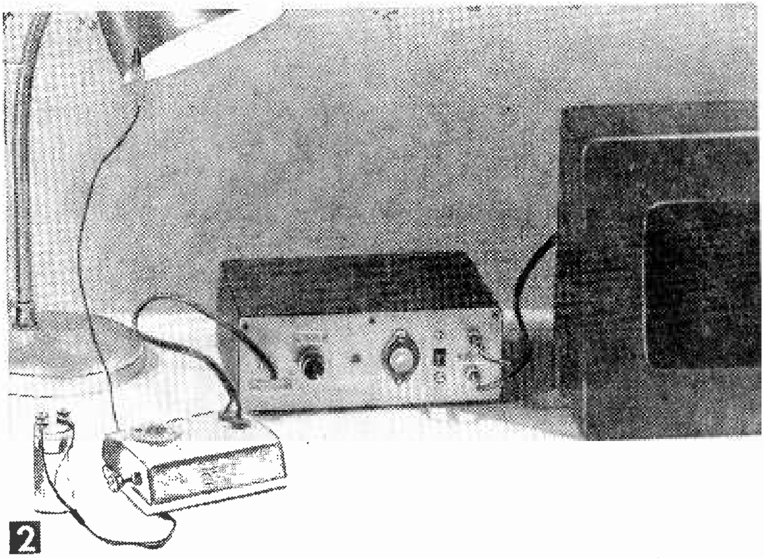
THE salt-water cell powering this transistor radio has all the advantages of a dry cell, costs only pennies to make, and lasts for months. The complete radio receiver, with battery but less earphones, can be built for $3 or less.

As shown in the photos, the battery delivers about three-tenths of a volt. The radio consumes only 12 microamps while running, and in actual tests ran three days continuously without any detectable dip in volume. Originally designed as an emergency receiver for Civil Defense use, the battery-radio combination offers reliability and unlimited use, because very little of the metal electrodes is consumed. As the battery ages, the plates corrode slightly, but all you need to do is clean them and replace the salt water.

**Start Building the Battery** by cutting the copper and aluminum electrodes from 24-gauge sheet metal. The 7/16 x 1½-in. size is recommended for the 4-dram vial shown (Fig. 4), but plate size has no bearing on voltage produced. Larger electrodes would produce more amperage, and experimenters may want to try metallic foils. Make the binding posts from two 8-32 x ¾-in. brass screws. Use a vise and fine hacksaw to cut off the heads of the screws, then saw slots about ¼ in. deep. Insert the electrodes in these slots. If the fit is loose, pinch the slots together in a vise and force the electrode in.

The glass vial is available at any drug store for a few cents. Get the type that has a close fitting plastic top. A plastic vial could be used as well, but the glass has a cleaner appearance. Drill two 9/64-in. holes in the cap spaced about ½ in. apart on a diameter line. In the center of the cap, you can drill or pin-punch a tiny hole to allow gas generated by the chemical action of the cell to escape. The vent hole should be very small so that the surface tension of the water will prevent leakage. If you use a power drill, make the holes as quickly as possible to avoid melting the plastic.

Now screw the two electrodes into the underside of the cap until the screws extend through about ¼ in. and add washers and binding nuts. The fit should be tight and



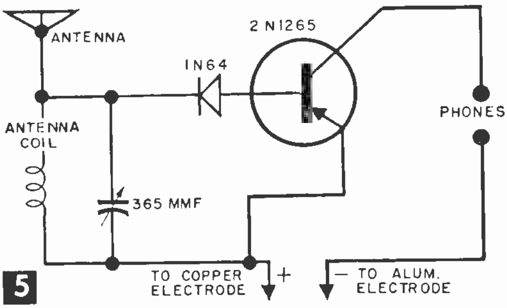

S&M lab staff connected radio to author Art Trauffer's battery-operated transistor amplifier (Radio-TV Experimenter #576). Music on AM stations in Chicago area came through with crystal clear tone and very little static.

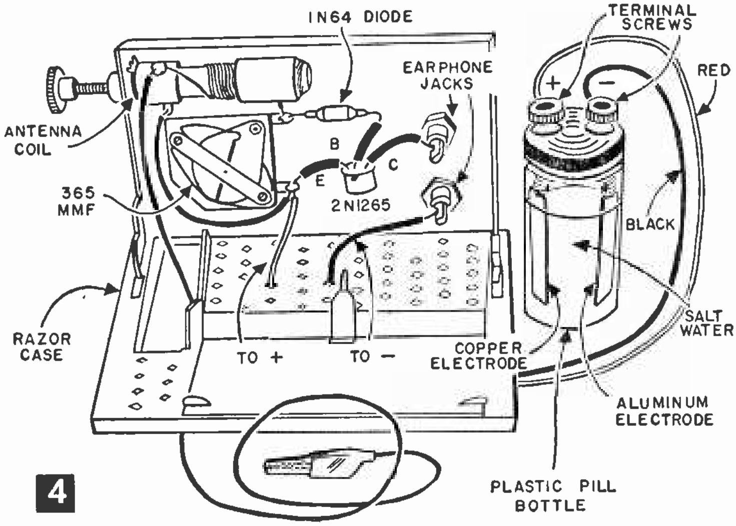
*earphone jacks and music came through surprising clear and free of background noise.*

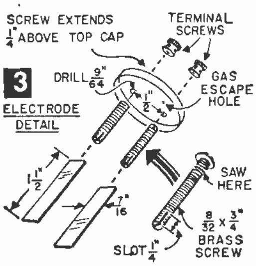
Drill the holes for the tuning capacitor, antenna coil, and headphone jacks and mount as in Fig. 4. The miniature capacitors must be kept clean and handled carefully to avoid damaging the plates. You can use a socket for the transistor or simply solder it into the circuit as shown. Make sure you use a heat sink to dissipate soldering heat. Hold the iron to the joints only long enough to make a good connection, otherwise the parts may be ruined.

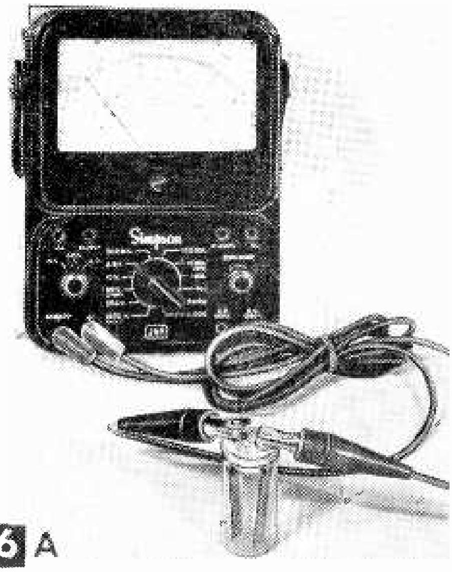
waterproof. To test the battery, fill the vial about three-quarters full with clean water and add a pinch of salt. Check output with a VOM. Though it may not seem like a large current, you'll find it adequate to operate may low current projects. Provided that resistance of the circuit is kept high, the battery will be suprisingly constant.

**The Transistor Radio** uses a minimum of parts and can be assembled in half an hour. The author used a 2N1265 transistor and an IN64 diode, but you can substitute other general purpose units (See Materials List). Editor's Note: *The assembly shown in the photos was tested in a basement lab, with the antenna lead clipped to the reflector of a lamp. After tuning the ferrite coil, reception was crisp on all Chicago-area stations. The radio ran constantly for 85 hours. An amplifier was connected to the*



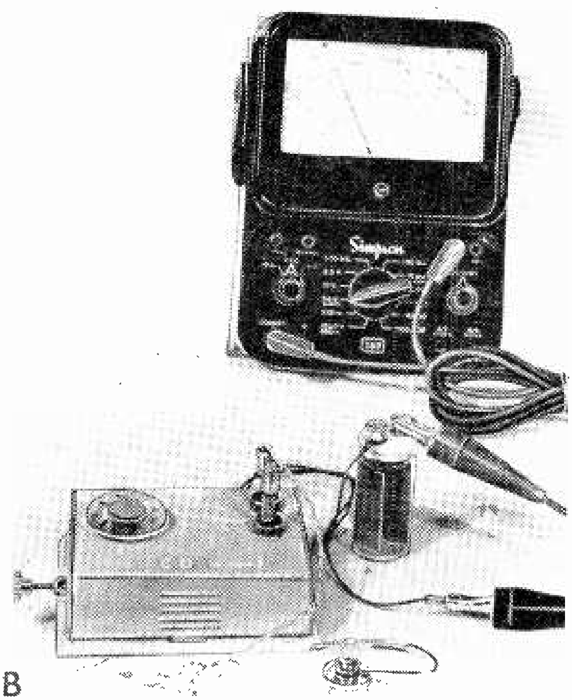





6 A

VOM shows 0.3 volts across battery terminals. Microammeter in series with battery and radio read 12 ua. Author Kelland rates battery at 0.1-*ma* output for 100 hours. Original battery continued to power radio after nine months with same electrodes.

B



MATERIALS LIST—SALT WATER POWERED RADIO

SALT WATER BATTERY

| Amt. Req. | Size and Description |
|---|---|
| 1 | glass vial with tight fitting cover, 1" dia. x 2⅛" high (available drug stores) |
| 2 | 8-32 x ¾" brass screws for binding posts |
| 1 pc. | 7/16 x 1½" 24 ga. copper |
| 1 pc. | 7/16 x 1½" 24 ga. aluminum |
| 2 | 8-32 knurled binding post knuts (salvage from old battery) |
| | **TRANSISTOR RADIO** |
| 1 | PNP transistor, any general purpose type such as 2N1265, CK 722 etc. Lafayette #SP-171 ($.49)* |
| 1 | diode. general purpose type such as IN 34A, IN64 etc. Lafayette #ST-148 ($.19) |
| 1 | antenna coil, Superex Vari-Loopstick or equal, Lafayette #MS 287 ($.88) |
| 1 | miniature variable capacitor, 365 mmf with dial Lafayette MS 445 ($.59) |
| 1 | plastic box, utility type or Gillette Razor case. Lafayette MS 160 ($.20) |
| 1 | high impedance earphone, 2000 ohm or more Lafayette #AR-50 ($1.39) |
| Misc. | small alligator clip, phone jacks, hookup wire |

* Lafayette Nos. refer to catalog of Lafayette Radio Electronics, 111 Jericho Turnpike, Syosset L. I., New York.

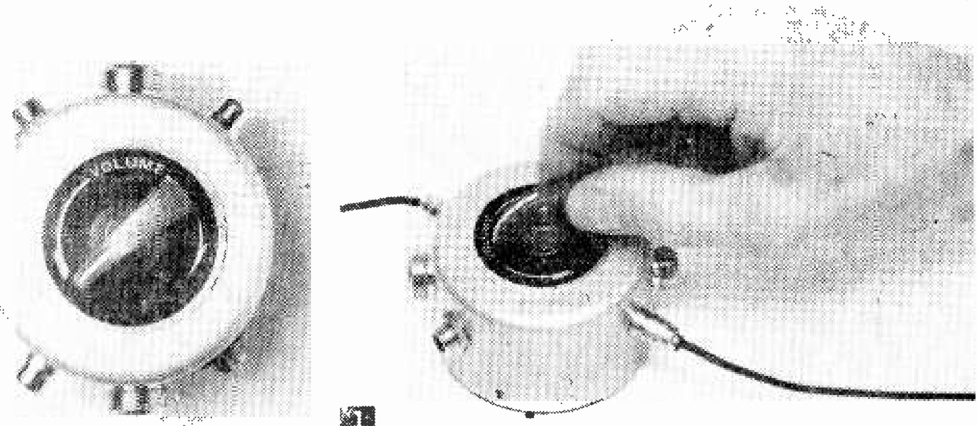
Feed the battery and antenna wires through holes in the top of the back of the box. Color code the battery leads red, positive (to copper); and black, negative (to aluminum), and attach a small alligator clip to the antenna lead wire so it can easily be hooked to various antennas you may want to try.

Test the radio by connecting the battery and plugging in a high-impedance (2000 ohms or more) earphone or headset. Be sure battery polarity is correct. If you connect backwards, you won't harm the transistor, and may actually get reception, but it will be far lower in volume. Clip the antenna lead to any suitable ungrounded metal object such as a bare spot on a telephone dial, a bed spring or a metal clothesline and tune for a station. If your connections are correct and all components working properly, you should be getting plenty of earphone volume on one salt-water cell. Adjust the antenna coil by setting the tuning condenser to a known station, then turn the knob on the ferrite core until the volume is at a peak.

Once the ferrite core is set for a certain antenna, the set should require no further adjustment. An on-off switch is not provided because the battery circuit breaks when you pull one of the phone plugs. Leaving the radio on will run the battery down after a few days, but the effect is not permanent. Clean the metal plates, replace the salt water and the battery is as good as new.

## Solder Spool Carries Flux Can

• Attach a cork to the lid of your can of soldering paste and set your spool of solder down over the plug as a means for keeping the can of flux handy. It will always go wherever the spool of solder goes and will also serve as a base to keep the spool from tipping over and rolling off the bench.—J. A. C.



1

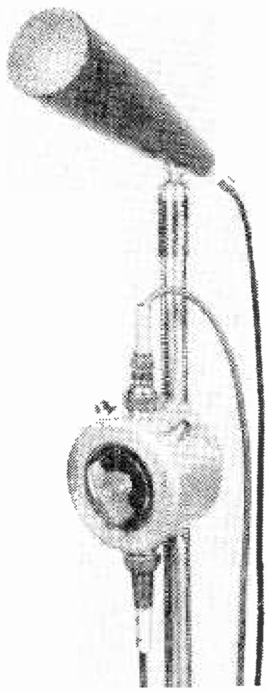
This control enables you to control output volume from the microphone position. For the photo, cables were shortened for sake of clarity. In practice, this control could be used on 50-ft. P.A. system lines in an auditorium.

# Remote Volume Control

## *for mike, earphones, and speakers*

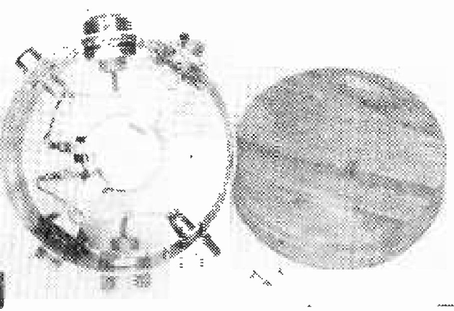
A HALF-MEG volume control mounted in a shielded box with a set of jacks and plugs gives you a handy versatile unit for audio and experimental work. Depending on your ability to shop for parts, the unit should cost only $3 or less.

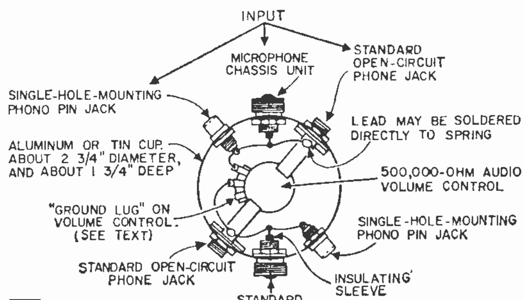
The control is ideal for use between the mike and amplifier, and it's especially handy when audio howl breaks out. You can connect it between a crystal phono pickup and an amplifier that has no gain control, or you can use it between the output of an FM or AM tuner and a pair of earphones. If you listen to a radio or TV set with earphones, use the control to regulate volume from your easy chair.



2

If you use floor stand or table stand mikes, mount the control box right onto the upright with a Paine pipe clamp and wood screws. These pipe straps are available in plumbing stores or at Sears Roebuck.






3 BOTTOM VIEW

MATERIALS LIST—REMOTE VOLUME CONTROL

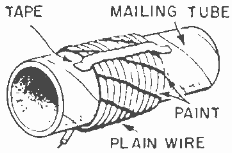
| Amt. Req. | Size and Description |
|---|---|
| 1 | 500,000-ohm volume control, audio taper Centralab B-60, C2 or equal |
| 2 | standard microphone chassis units Amphenol 75-PC1M or equal |
| 2 | standard single-open-circuit phone jacks, Switchcraft 11, or equal |
| 2 | single-hole phono-pin jacks. Switchcraft 3501FP or equal |
| 1 | knob with pointer to fit volume control shaft |
| 1 | round panel-mounting dial plate |
| 1 | aluminum or tin cup about 2¾" in diameter |
| 1 | 4 x 4 x ½" plywood |
| 3 | roundhead woodscrews ¼" long |
| Misc. | copper hook-up wire, spaghetti |

The author used a 2¾in.-diameter round aluminum cup trimmed off to a depth of 1¾-in. You may be able to find a suitable metal can with a friction lid, which would eliminate the plywood disk shown in Fig. 3. Cement a disk of felt or "non-skid" carpet base rubber to the back of the cup.

The easiest way to make the holes in the aluminum case is to start with the point of a sharp knife blade and then enlarge up to size with a rat tail file. Use lock washers, usually supplied with the parts, to prevent the volume control and jacks from turning in their holes. Bend the ground lug on the volume control around the solder to a large lug that fits over the shaft of the control. This automatically connects the ground lug of the control to the metal cup and to the chassis side of the jacks (Fig. 3). Be sure to use insulated wire on the mike chassis leads to prevent shorts.

When wiring is complete, cement a piece of aluminum foil over the wood disk. Just as a microphone line must be shielded, the entire assembly of volume control and plugs must also be shielded to prevent ac hum pickup. —Art Trauffer.

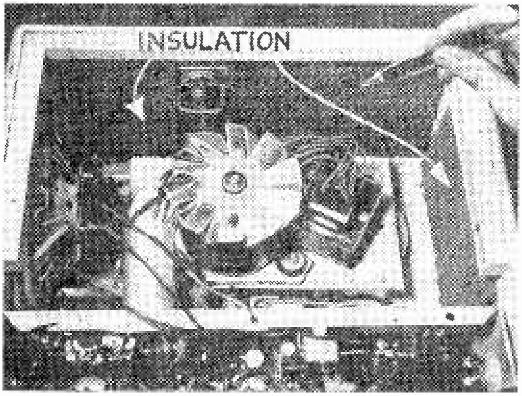
## Color-Coding Wires



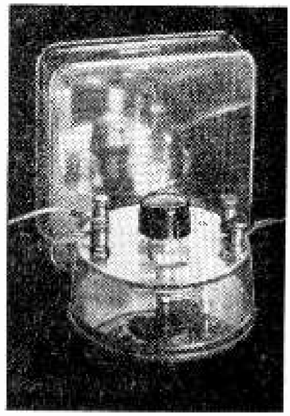

• When you need some color-coded wires for a circuit and only plain-colored wires are on hand, color-code your own. To do this, wrap lengths of the wire around a mailing tube, broom handle or other suitable form, and paint diagonal lines across the coil with different-colored paints. Apply the paint sparingly with a cotton swab or piece of cotton on the end of a match. Use tape to hold the coil in place until the paint dries.—John A. Comstock.

## Tape Recorder Improvement

• To improve the frequency response of your tape recorder and eliminate medium and high frequency reverberations, tack or cement sound-absorbing material to the inside of the case. Use regular fiber-glass insulation or thin strips of sponge rubber. The acoustic insulation damps out the speaker's back wave and also absorbs motor rumble noise.—John A. Comstock.

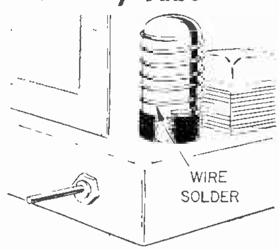



## Kitchenware for UHF Experimentation



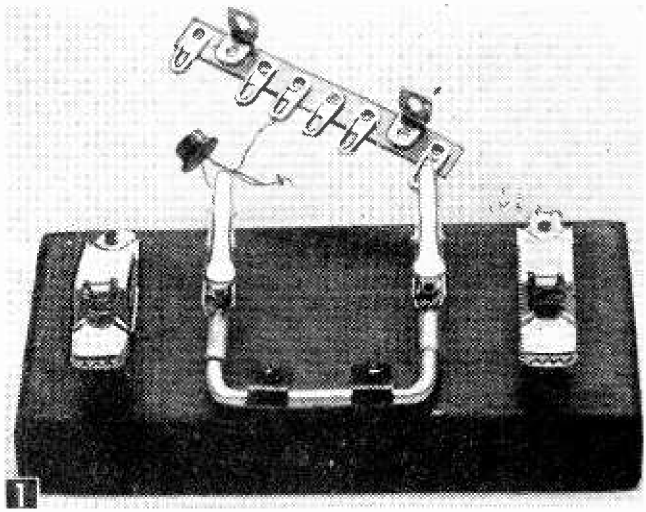
• Plastic food containers make good looking low-loss chassis and cabinets for various ultra-high-frequency assemblies. Many of these containers are made of Styron, a member of the polystyrene family and a very good insulator. Containers are cheaper than sheet polystyrene, and come already formed. Photo shows two styles which are especially handy. The round one is an experimental FM crystal set using a germanium diode, which slope-detects close-by FM stations.—A. T.

## Solder Silences Noisy Tube




• When a tube in a radio, TV, audio amplifier or other electronic device becomes microphonic and produces an undesirable howl or ringing sound from the speaker, don't throw the tube away. Wrap the glass envelope with several turns of wire solder or heavy uninsulated copper wire. The added weight and support will often damp out the vibrations that set the tube elements oscillating.—John A. Comstock.

# Build a Better THIRD HAND



1

In operations such as soldering transistors to tie points, the clips not only replace long-nosed pliers to hold the leads but also will divert heat from the iron away from the transistors.

OUT of wood and wire scrap and some inexpensive clips, you can fashion a helping hand far superior to the usual stunt of nailing two spring-type wooden clothespins to a board or your workbench.

It's more convenient, useful, and versatile and has a far more workmanlike appearance. Especially good for soldering applications (Fig. 1), you can move it at will to work with very light or heavy gauge wire, then fold it flat for quick storage when the job is finished.

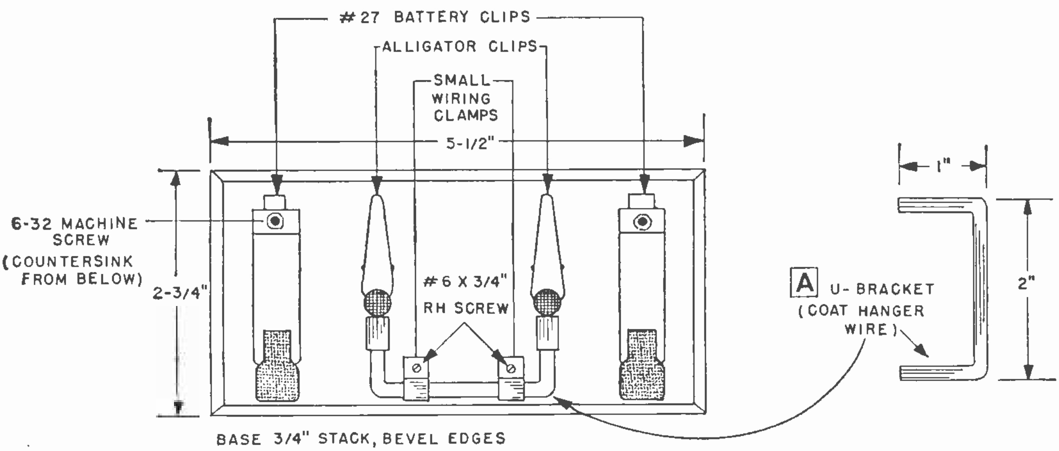
To build my "third hand," I began by cutting a piece of ¾-in. scrap stock to the dimensions in Fig. 2, beveling all edges and then sanding the piece smooth. This became a base for two different pairs of clips.

I installed two *Mueller* #27 battery clips on the base, attaching one near each end as in Fig. 2 with the help of a #6-32 machine screw countersunk from below. These serve to hold splices in larger wire or to tin the ends of stranded wire.

Next, I formed a U-shaped bracket as in Fig. 2A from a scrap of #4 wire, but you can just as easily cut it out of a wire coat hanger. Solder a Mueller series 60 alligator clip on each end of the bracket, then center the bracket between the battery clips and well to the front of the base as in Fig. 2A. Secure it in place with two small wiring clamps of the single-hole, hookover type and tighten the clamps just enough for the bracket to be moved up and down and remain in any desired position.

The alligator clips are ideal when working with small wire or for holding small parts which persist in jumping all over the bench.

All four clips are available at mail order electronic houses for about 40¢ and the wiring clamps can be had at hardware or variety stores for a few pennies.—HOWARD S. PYLE.




2 TOP VIEW OF "THIRD HAND"

# Putting the RIGHT Radio in Your Car

The average car radio installation can be completed in three hours or less. On the hood are an antenna, radio and speaker with adapter panel supplied in a typical kit.

## How to buy it, install it, and get trouble-free performance . . . . and save money doing it!

By LOTHAR STERN

IT DOESN'T matter whether you drive a new sports car with a small dash panel or a 10-year-old family sedan.

You can do a radio installation job yourself that will turn out like a professional job. You'll save money by choosing the best buy in a radio that fits your need exactly. And by following a few simple tips from "pros," you'll enjoy clear, noise-free reception with repair bills kept to a minimum.

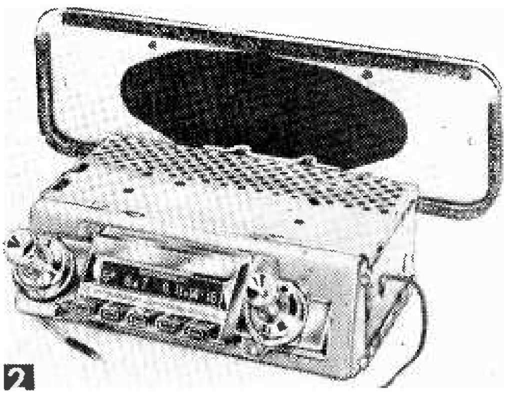
The radio makers offer you a choice of two basically different kinds of car radios, the custom type (Fig. 2) made specially to fit dash cutouts of a certain make and year of car, and the universal type (Fig. 3), a radio so dimensioned that it can be used on any car, new or old.

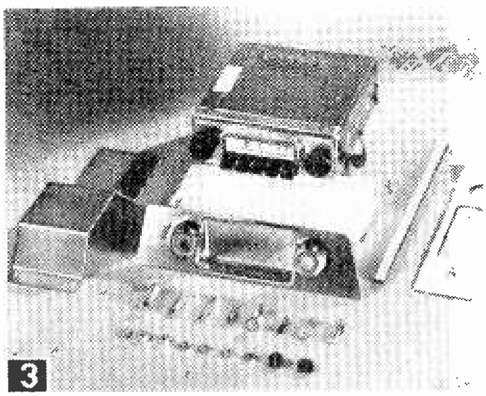
**Custom Radios** are easiest to install because all the holes and cutouts are already in the car. All you do is follow the detailed instructions packed with the radio. They even tell you which cables may have to be disconnected to get into the radio compartment. If your car is less than three years old, you'll have no problem in finding a custom set in radio stores, automobile accessory stores, or in mail order catalogs. But if your car is less youthful, you may have trouble buying the radio, since most makers stop production as soon as the hardware is outdated by new dashboard designs. Still, there's no need to rule out custom fitted-in-the-dash installations.

Several radio manufacturers make universal receivers with dimensions to fit practically any car, while other firms market special trim-plate kits to adapt universal receivers to various dashboards. Chances are that if your car is new enough to deserve a good radio, there's either a custom model or a universal type with a trim-plate kit (Fig. 3).

**Sports Car and Import** "bug" owners may not have enough room on the dash for instruments, let alone a radio. If that's your problem, you'll probably settle for an under-dash installation (Fig. 4). This isn't apologetic. The under-dash installation has a lot to recommend it on *any* car, and it should even be considered for cars where custom radios are readily obtainable.

When you trade in a car, the radio adds little resale value. With dash variations so widely prevalent, it would be pure luck if a custom radio for one car fitted the dash of another. With a custom radio you have to resign yourself to the loss of your radio investment when you get around to upgrading your transportation. But with the under-dash installation, you can quickly install the radio rig without mutilating the dash. And you can remove it just as fast and reuse it in any other car you buy.





**Above, Typical custom radio designed to fit dash cutouts of 1961 Chevrolet.**

**Right, Universal-type radios along with adapter kits (Cartrol shown) can be used to make good looking in-dash installations in recent model cars.**

**Below, right, A compact transistor set mounted under dash is the answer for small import and sports cars where space is limited.**

Another good reason for under-dash radios is that service costs on the radio itself are a lot lower. It takes much less time to get the chassis out of the car and onto the radio service bench. And if you like to tinker with radios yourself, you'll appreciate that pull-out feature.

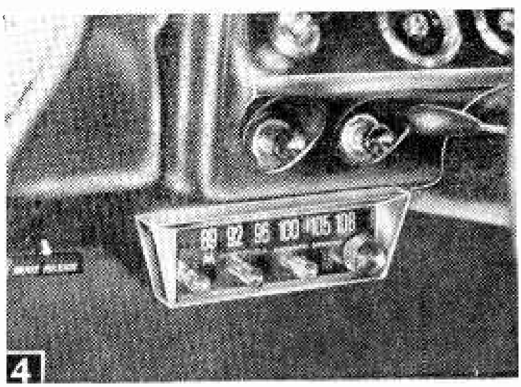
**Operating Features.** Fundamental to the radio hookup is your car's battery voltage. When you buy a custom receiver, it automatically is right for your car's electrical system. With the universal radios, you'll have to check to see whether you have 6 or 12 volt, negative or positive ground wiring in the car. Remember this if you plan to salvage a radio and switch it over to another car.

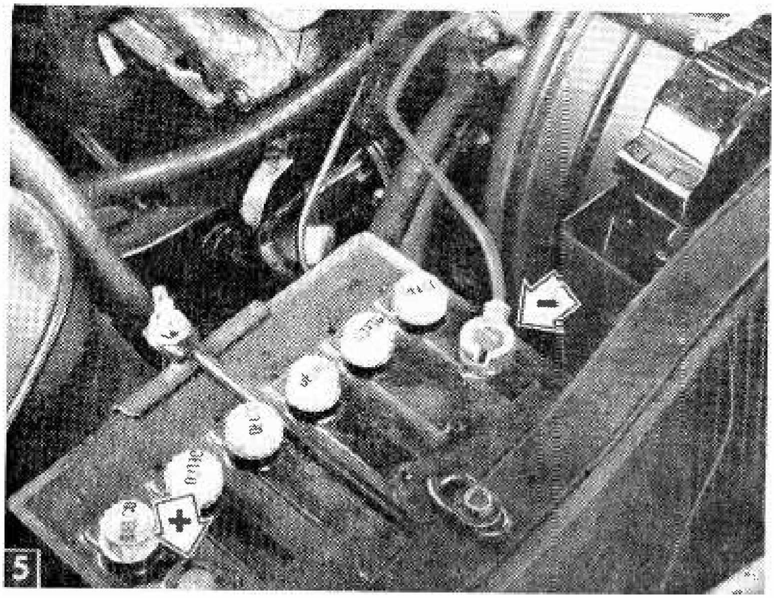
Station pushbuttons are important for safety, especially if you drive expressways and need traffic forecasts. Manual tuning is not only annoying, but can cause an accident in crowded traffic. The added cost of $10 to $15 for buttons is well worth it unless you are mainly a rural driver.

**The Tube vs. Transistor** argument wouldn't have come up five years ago. Up to that time the vacuum tube was the only amplifying device available, and a mechanical vibrator was necessary to deliver the stepped up d-c power to the tubes. When transistors became practical, you had the first big improvement in car radios in 20 years, and the vibrator's death note was sounded. Consisting of a set of metal contacts opening and closing fast, much like an ignition distributor, the vibrator had a higher rate of failure than any other part in the radio.

Other transistor advantages: no heat producing power-wasting filaments, more circuit efficiency, and better reliability. But they are more expensive than tubes, though the extra cost is offset by reduced battery drain and longer life. This year, most car radios use transistors to replace the audio driver and output tubes, while using tubes for the *r.f.* and *i.f.* sections.

Several manufacturers are even offering completely transistorized car radios, and though they cost more than the hybrid sets, they do give you instant warmup, low current drain, compactness, and high reliability. It's likely these





5

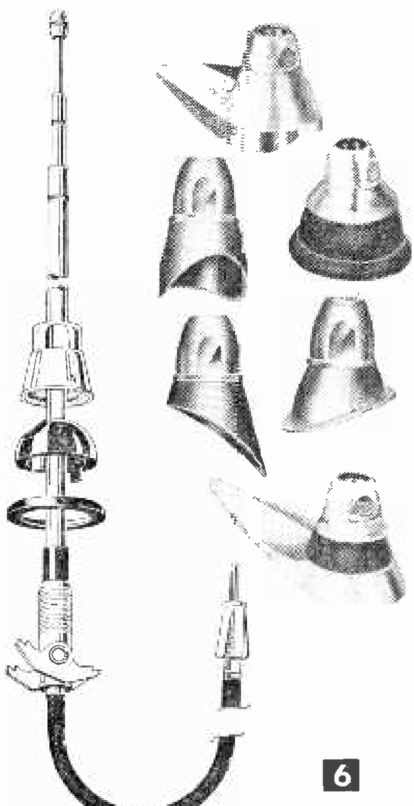
If a strap connects from the negative battery pole to the car frame, your wiring system is negative ground. If it connects from the positive pole, the car is wired positive ground.

sets will run for many years with no repair expenses.

Loudspeakers are easy to install in all recent-vintage American cars, since dash cutouts covered with metal grille are built in. Most custom and universal radios come with separate speakers that either fit the dash cutouts directly, or with an adapter board.

Many import cars have no dash provision for mounting speakers, so some universal-type radios come with built-in speakers. Such receivers can be used with any kind of car, but audio quality usually suffers. With a dash mounted speaker, the dash acts as a baffle to improve sound quality and distribution.

The difference can easily be heard by listening to both kinds of installations. If your radio has a built-in speaker, an additional extension speaker mounted on the dash or rear deck will make a big improvement.



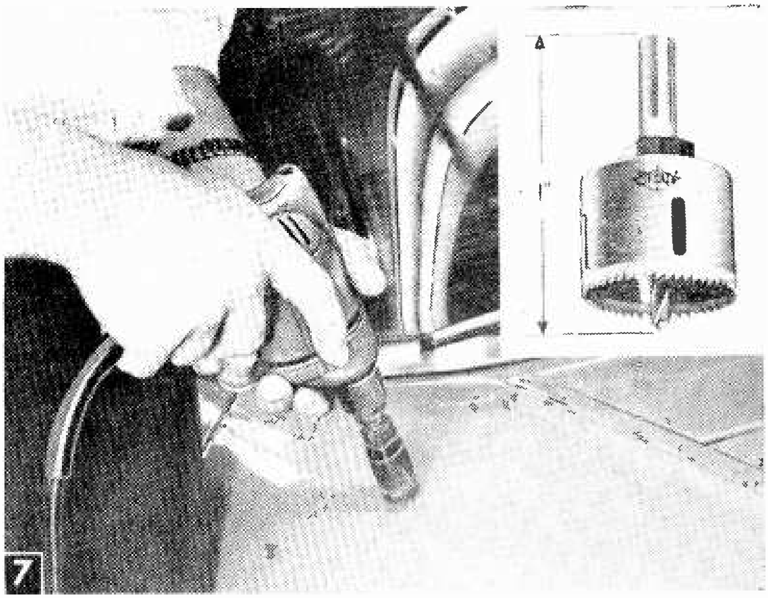
6

You can order your antenna with any one of many bases that fit the curves of a wide variety of cowls and fenders.

**The Antenna** is a vital part of the receiving circuit in your car. Physically, there are few obvious differences among various brands. Unless you confine your driving to large cities where maximum range is not needed, avoid the so-called "economy" antennas which may be considerably shorter than the 54-58-in. fully extended length required for full signal pickup. Mechanical strength, rain proofing, and installation ease are factors you can check in the manufacturer's literature. Your antenna need not be identical in appearance to the kind used by the car manufacturer. But if you have a late model car, you could request that your dealer order an antenna duplicating the appearance of factory-installed equipment. It's a matter of style and does not affect the radio performance.

**Installation Instructions.** Start with the antenna. It's the most painful part of the job because you'll be drilling a hole in the car body. With a little caution there's no real chance of an error.

Most car antennas mount in a single 1-in. hole in the fender or top cowl of the car. Buy the right antenna and the entire job shouldn't take more than a half hour. Even if the hole you cut (Fig. 7) isn't perfect,



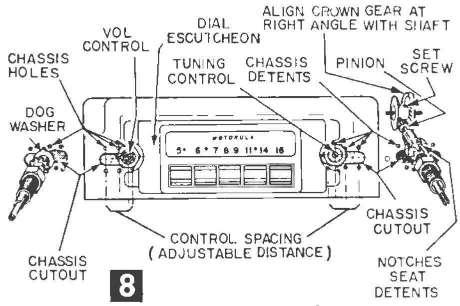
With the special hole sawing attachment, it takes only seconds to drill the antenna hole through the fender.

it won't matter because the antenna mount will cover many sins.

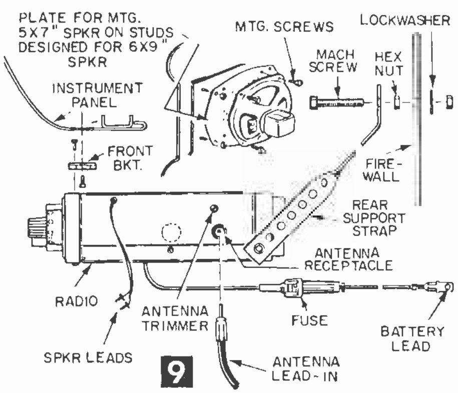
Take a look at factory-installed antennas on cars of the same vintage to determine just where to mount the antenna. That's to make sure you won't run into trouble drilling the hole. Use a ¼-in. electric drill with a 1-in. step up bit designed for metal. Or start with small drills and enlarge the hole with a metal reamer. Even better if you don't mind spending a few dollars or borrowing the tool is to use a circular hole saw (Fig. 7). For any method, be sure to centerpunch the hole before starting the drill.

On some cars, the antenna connecting lead feeds in through the engine compartment. Others are arranged so the lead-in enters the car on the dash side of the firewall between the fender and the side kick pad. This means you temporarily remove the kick pad, and fish the lead through under the floor mat to the radio location.

**The Radio Installation** requires that you consider the layout of other accessories in the car. Custom radio installations are simplified by step-by-step instructions. If you are a timid do-it-yourselfer and a preliminary look at the dash indicates difficulties, then write the manufacturer for a manual before you buy the radio. Usually these instructions are sent free and help you to appraise the job.




A unique feature of one make of universal receiver permits shifting the control shaft locations to match most existing panel cutouts.



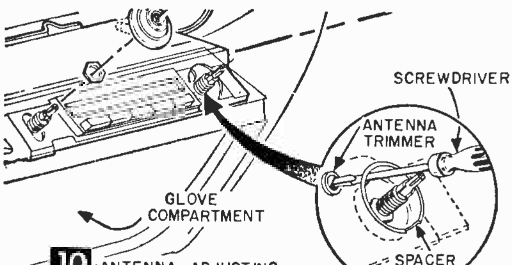

Exploded view, under-dash installation.

Some domestic cars have speaker wells designed for a certain size speaker frame. If you select a certain radio, the speaker may be the wrong size. However, this won't be a problem since the dealer can supply an adapter board, or he may be willing to exchange the speaker for one that fits.

Whether in-dash or under-dash installation is easiest depends on the make of your car. On domestic cars with straight dash panels, universal radios often can be used without any modification. Some receivers are supplied with an optional matching trim-plate to fit most cars. One set (Fig. 8) has adjustable shaft centers which permit shifting controls to left or right for an exact match of the control cutouts on the dash. The head of the radio fits most openings and the trim plate lends a custom appearance. A typical installation (Fig. 9) shows how the radio is held in place by control mounting nuts in front, and a strap (included in kit) fastened to the firewall. Before you drill any holes through your firewall, check the opposite side to prevent damage to parts mounted there.

On some domestic cars, the dash panel is curved so much that the rectangular trim plate of the radio does not fit. Or the radio cover plate may cover a large gaping cutout rather than individual holes for radio controls and dial. Either way, the universal radio will require a custom-type trim kit made by such companies as Cartrol, Porter Dietsch or Metra, if an under-dash installation is desired.

To save expense use the simpler under-dash installation (Fig. 4). You'll have to drill two small holes in the lip of the dashboard and another one in the firewall of the car. The radio shown is one of several makes that will fit a large percentage of sport and import model cars.



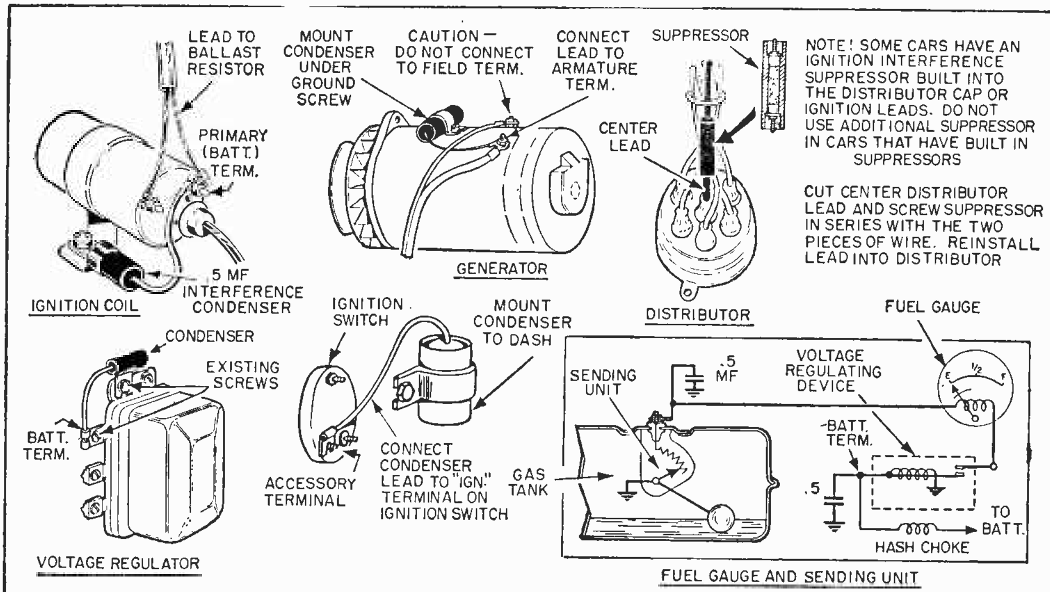

10 ANTENNA ADJUSTING

**Only Three Electrical Connections** are required. The antenna has a pin plug already connected to the end of the lead-in wire. Simply plug it into the receptacle on the receiver. Push the two speaker wire leads into the lugs on the speaker. Then fasten the radio's "A" lead to the accessory side of the ignition switch or to any other line from the battery.

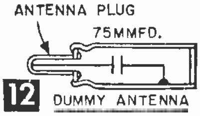
Radio adjustment is simple, but often overlooked even in commercially installed sets. Every car radio has an adjustment screw labeled *Antenna Trimmer.* The trimmer tunes the antenna to match the receiver input so that you get maximum signal transfer.

On some receivers such as the 500 XA (Motorola), a knurled knob extends through the receiver housing. On others, a hole in the housing permits screwdriver access. Extend the antenna to its full length, tune the receiver off-station near the high end of the band, 1400 KC on the dial, and adjust the trimmer for maximum noise volume. Failure to make this adjustment causes weak reception, increased interference, and poor performance.

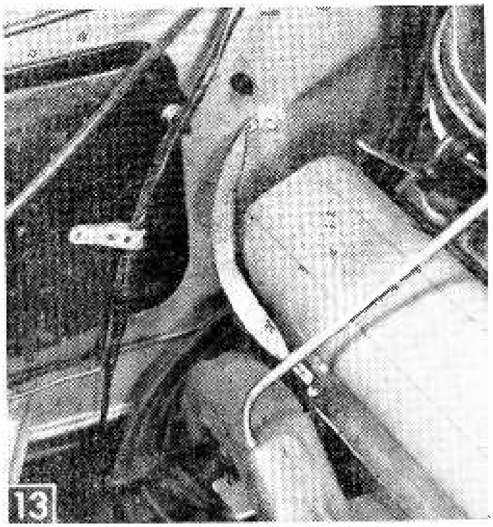
**Solving Interference Problems.** Because most cars on the road are equipped with radios, the manufacturers now take measures to reduce interference. Despite built-in interference suppressors in the distributor cap, special resistor spark plugs, and resistance wire or by-pass capacitors at various critical points, interference often mars performance of even the best radios. Proper counter measures will reduce or completely eliminate the trouble.




11 SUPPRESSOR RESISTORS AND CONDENSERS



12


13

Metallic straps are available in various lengths for grounding parts in the engine compartment.

Radio interference is caused mostly by arcing or sparking within the car's electrical system. Distributor rotors and voltage regulators are the worst offenders. The problem is to track the trouble and neutralize it. Some of the interference that plagues any AM radio is caused by atmospheric conditions, power lines, or other external sources. For these there is no remedy. Only the increase in noise when the engine is running over what you hear with motor dead can be reduced.

One simple remedy, if the manufacturer has not already used resistance wire leading to the distributor, is to cut the lead and add a distributor resistor (Fig. 11). Or you can replace the entire distributor lead and replace it with one made of resistance wire.

If the interference persists, give the spark plugs the same treatment. If you need new plugs anyhow, replace them with special type resistor spark plugs.

If these remedies are not entirely effective, sleuthing is in order. You'll need to find out whether the trouble is actually caused within the car or if it is coming in through the antenna. Unplug the antenna and replace it with a homemade dummy antenna consisting of a 75 *mmfd* mica or ceramic capacitor wired to an antenna plug (Fig. 12).

If interference drops, you know it is radiated from an outside source, and your wiring is not at fault. But if it remains the same, try wiring in .5 or 1.0 mfd. by-pass capacitors at one or more points (Fig. 11). Often a single capacitor will do the trick.

First try mounting the capacitor at the accessory terminal of the ignition switch. Then try the accessory terminal battery of the ignition coil. If neither location reduces the noise, move the capacitor to the voltage regulator's battery terminal and finally to the armature terminal of the generator. Generator noise is usually a high-pitched whine varying with engine speed. If a capacitor at one place reduces the noise partially, it should be left in place and others added elsewhere.

Noise entering the radio through the ignition wiring usually can be identified since it does not change in volume when the volume control of the radio is varied. For this, use a 100 mfd. capacitor at the battery terminal of the ignition coil.

**More Countermeasures.** In rare cases, one or more faulty grounds on the car will cause trouble. For example an antenna may be mounted on a fender which does not have perfect electrical contact with the body. Or the engine itself may not be well grounded to the frame. Special copper-braid grounding straps are available (Fig. 12). Best locations are found by trial and error.

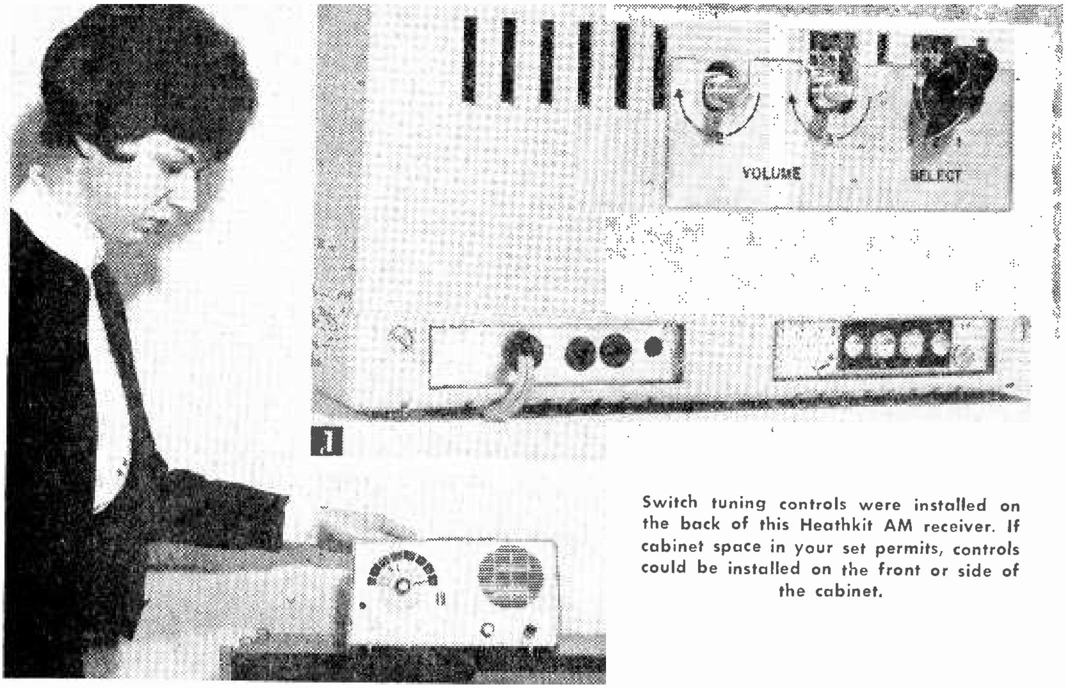
Other accessories can produce noise. Most radios require little if any interference reduction. But in some cases, you'll have a real headache. It may take hours to find the trouble, but take comfort in the fact that it will probably take an experienced technician just as long to do the job, and you are saving money.

**Fuel Gage Problems.** Some fuel gage sending units produce noise whenever the car bounces causing the float mechanism to change position. Check by pushing up and down on the rear bumper to move the mechanism. Remedy is installing a 0.5 mfd capacitor on the sending mechanism usually located on the floor of the car trunk. This will also cure certain noise heard when the engine is off, but your key is turned in the ignition switch.

If you get noise by jarring the dash panel, the trouble may be arcing in the fuel gage regulator contacts. Again, use a 0.5 mfd capacitor from the regulator's battery connection to ground.

The temperature gage can be a noisemaker too. The sending unit is on the engine block. Disconnect for a moment to confirm your suspicion, and remedy with the 0.5 mfd capacitor connected from the wire to ground. Any set of electrical contacts including those in your stop and turn signals can produce noise, usually a popping sound. The capacitor is the remedy.

Sparking of electrical contacts is certainly a common cause of intermittent popping noise. But in older cars, you can sometimes apply the capacitor remedies and the noise may not be cured. Check electrical connections that are supposed to be solid and are not. Loose or corroded lugs and terminal screws, and even worn lamp sockets can cause the noise.




Switch tuning controls were installed on the back of this Heathkit AM receiver. If cabinet space in your set permits, controls could be installed on the front or side of the cabinet.

# Add Switch Tuning To Your Radio

## By JOHN E. TURNER

**MATERIALS LIST—SWITCH TUNED AM RECEIVER**

| Amt. Req. | Description | Use |
|---|---|---|
| 1 | single-gang switch, Mallory, 4-pole, 3-position, type 3243J (BA 12A366)* | switching |
| 2 | ceramic trimmer, 8-50 uuf, Erie type N750 (BA 15B666) | antenna circuit |
| 2 | ceramic trimmer, 5-25 uuf, Erie type NPO (BA 15B644) | oscillator circuit |
| 4 | disc ceramic, Erie type ED (values to be determined by test) (BA 15B121) | shunting capacitors |
| 2 | midget volume control, 1 meg (BA 18B710) | level control |
| 1 | bakelite sheet, 6 x 6 x 1/16 (BA 11A179) | component board |
| 4 | fahnestock connector, type 10 (BA 12A1090) | test setup |
| 1 | aluminum sheet, perforated, Reynolds item 33 | mounting bracket |
| misc. | machine screws, washers, nuts, hookup wire, solder | |
| | Estimated cost for all components and materials: $6.85. | |

* BA Nos. refer to catalog of Burstein-Applebee Co. 1012-14 McGee Street, Kansas City 6, Mo.

ONE of the most useful extras ever built into home radios was the push button tuner. Just a few years ago, it was offered on many expensive sets, but manufacturers competing for a price market have eliminated the push button. It is now found only on car radios—where driver ease in tuning stations is considered a safety necessity.

The average listener tunes to only two or three stations regularly. But when he wants a certain station, he often needs to tune quickly so as not to miss an important news broadcast, the morning weather, or a traffic report. Maybe you have a clock radio and like to wake up to music? That usually means that if you want a certain station to come on automatically in the morning, you have to pre-set the volume and tuning the night before.

Why shouldn't the radio listener have the same advantage as the TV viewer who can change channels by merely rotating a switch? This AM receiver modification does the trick and has the added feature of individual pre-set volume controls for each station, compensating for differences in station output.

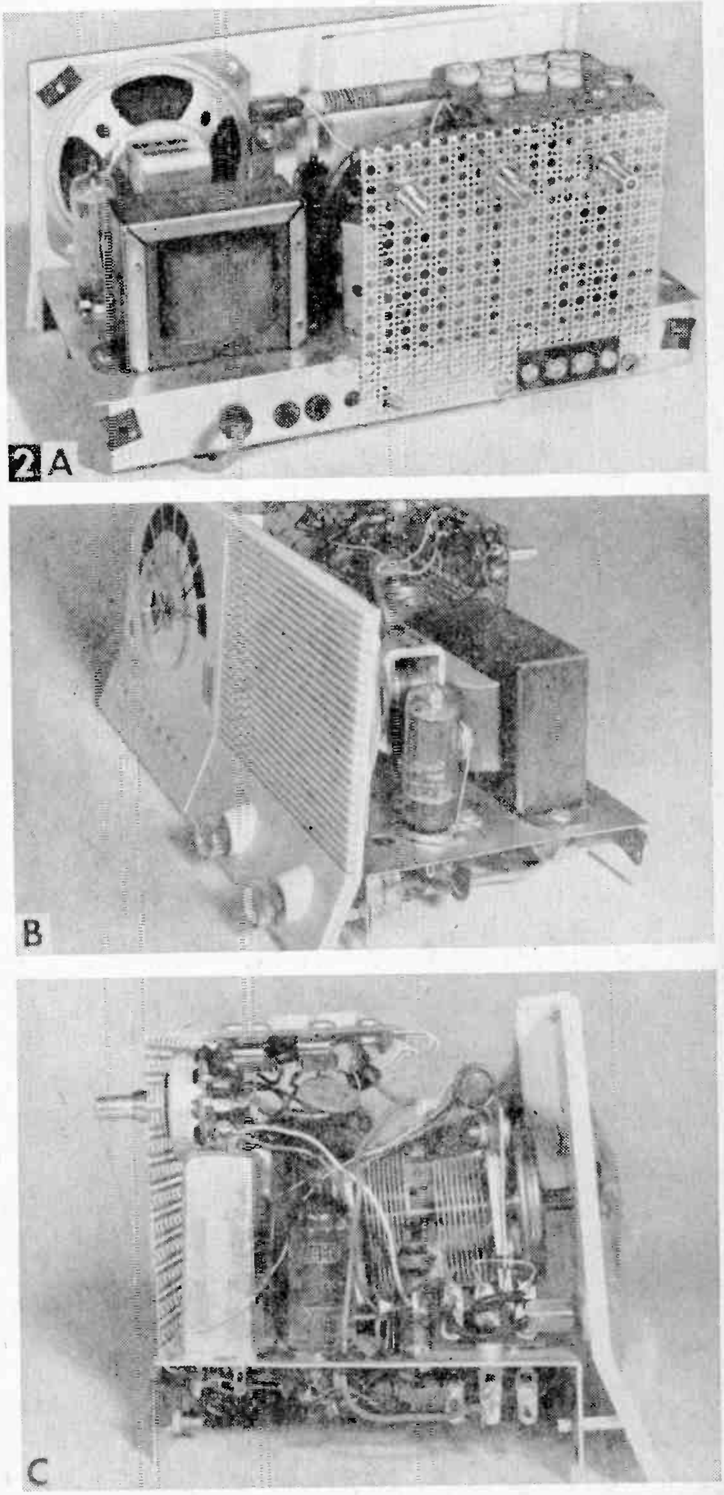
**Small and Convenient.** Though push-button auto radio tuners are available from electronic suppliers and surplus dealers, these mechanisms are bulky and will require a special housing. The modification in Fig. 1 is small enough to fit in the existing cabinet of most small receivers. Extra controls are shown on the rear so as not to affect the styling of the radio itself. You may prefer to mount the controls in a more convenient location, consistent with mechanical and electronic considerations.

The most expensive part you will need is a four-pole three-position rotary switch. If you want to add more stations, buy a switch with more positions. Also, you will need trimmer capacitors and an assortment of fixed capacitors in values up to 300 *mmf* in 20-30 *mmf* steps, several pots, and hardware. Mount the switch and level controls on an aluminum bracket attached to the rear of the chassis with 6-32 screws and nuts. Exact dimensions are not given because they will vary with the individual set.

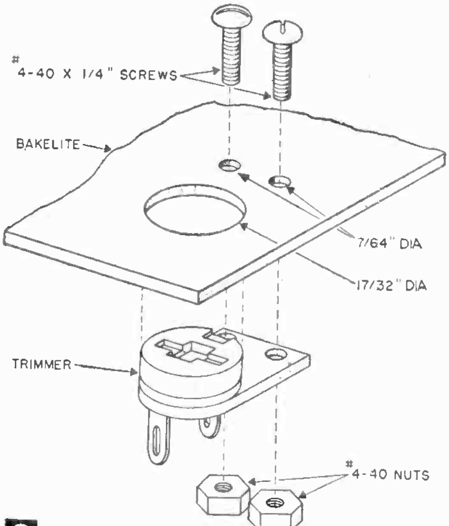
Locate the rotary switch as close as possible to the converter, oscillator coil, and variable capacitor. It is very important to keep leads between the antenna and oscillator circuits, converter, and rotary switch as short as you can to minimize RF losses and oscillator detuning. If leads are too long, you may find it impossible to tune stations above 1450 *kc*.

The accessory tuning circuits are designed around pairs of trimmer capacitors mounted on a board for convenience. You may mount some spares for adding more tuned stations later on. With this particular set, a 3-25 *mmf* trimmer worked out well for the oscillator circuit with an 8-50 *mmf* trimmer for the antenna section. These values are not critical, but have given good results.

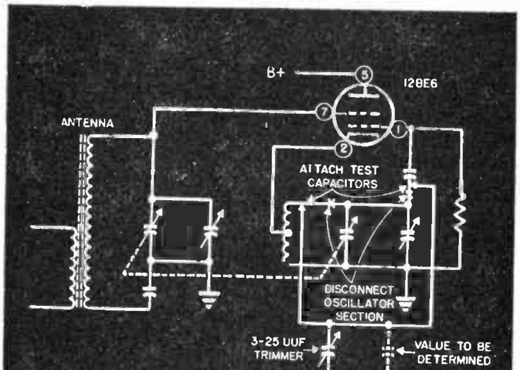
**Install Two Pairs of Fahnestock** clips on the board. Wire one set across the oscillator trimmer and



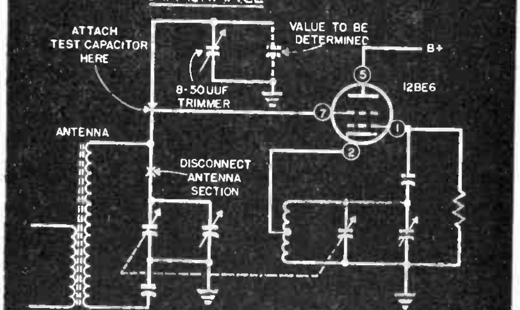

Top, Rear view shows components mounted on perforated metal bracket. Center, Right side of chassis shows level controls wired parallel with volume control. Bottom, Note that rotary switch must be located as close as possible to converter and variable capacitor.



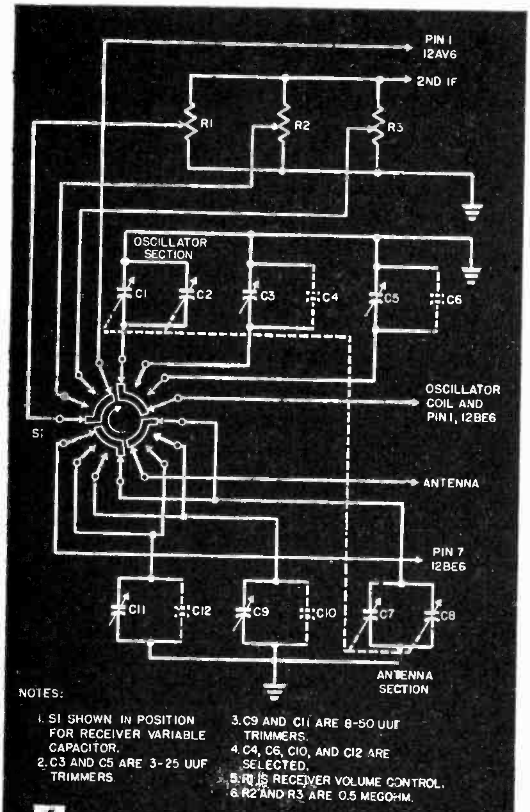

3 TRIMMER MOUNTING DETAIL




4 SETUP FOR DETERMINING OSCILLATOR CIRCUIT CAPACITANCE




5 SETUP FOR DETERMINING ANTENNA CIRCUIT CAPACITANCE

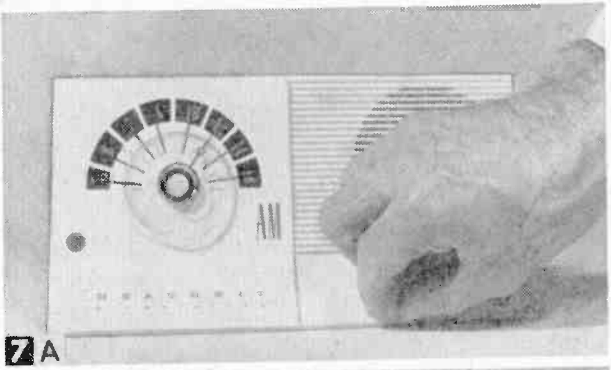


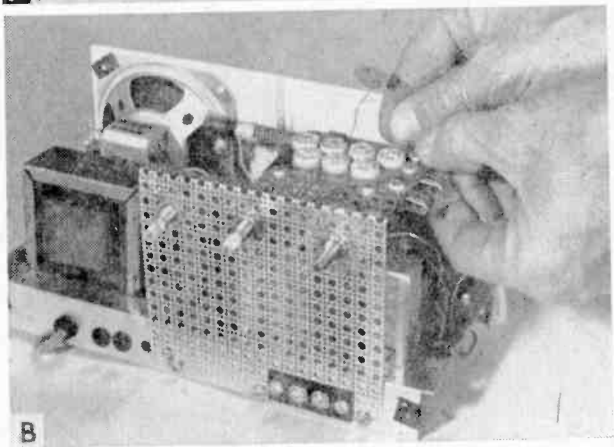

6 SWITCH-TUNING SCHEMATIC

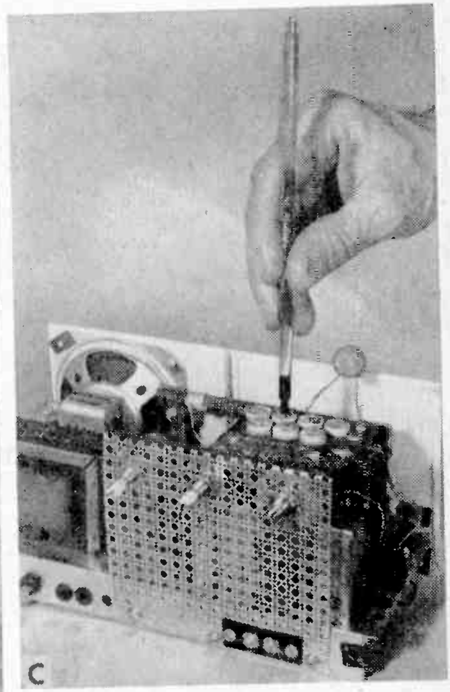
the other set parallel to the corresponding antenna trimmer. These clips are used in the test setups to determine the values of shunting fixed capacitors. A schematic diagram (Fig. 6) represents the RF circuitry up through the converter in a typical AM receiver. You may need to make a few alterations to adapt the arrangement to your set. Essentially, two additional sets of capacitors are set up in parallel with the antenna section of the original variable capacitor, and two capacitors are in parallel with the oscillator section. Two circuits have to be switched for the antenna section, and a single for the oscillator.

Wire the level controls in parallel. The circuit between the tap and pin 1 of the detector is switched simultaneously with the corresponding RF circuit. Two ½-megohm pots in parallel with a 1-meg control in the receiver produced satisfactory results on the model shown. Input loading of the detector was not adversely affected by any combination of pots with values varying from ½ to 1 megohm. The ends of the shafts may be slotted for screwdriver adjustment, or you can install knobs.

**Finishing Up.** To determine the fixed capacitor values for shunting the trimmers, use the test setups shown in Fig. 4 and Fig. 5. It is best to select the value of the oscillator capacitor first. Simply disable the oscillator section of the variable and connect the antenna section to the circuit you are testing. Rotate the dial to the station you want to tune, insert a test capacitor in the Fahnestock







Top left, First test step is to disable one section of variable capacitor, and substitute one of the trimmers. Bottom left, insert test capacitor in Fahnestock clip. Above, Tune station by adjusting trimmer.

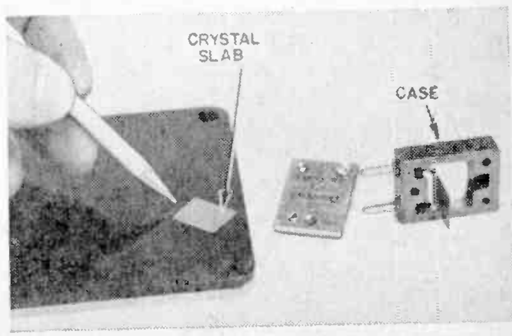
clips, and adjust the trimmer for maximum response. The trimmers listed had enough range to tune between 1450 and 1600 *kc* without adding fixed shunting capacity. As examples of other points on the dial, a 27 *mmf* capacitor in parallel with the 3-25 *mmf* trimmer for the local oscillator, combined with the 8-50 *mmf* trimmer for the antenna section tuned in a local station at 890 *kc*. The bottom of the dial required a 300-*mmf* capacitor in parallel with the 3-25 *mmf* trimmer to pull in a station at 600 *kc*. To tune a station at 890 *kc* the antenna circuit in the model resonated above the oscillator circuit, which is opposite to the usual condition. As long as the IF is 455 *kc*., it seems to make little difference which circuit resonates above the other.

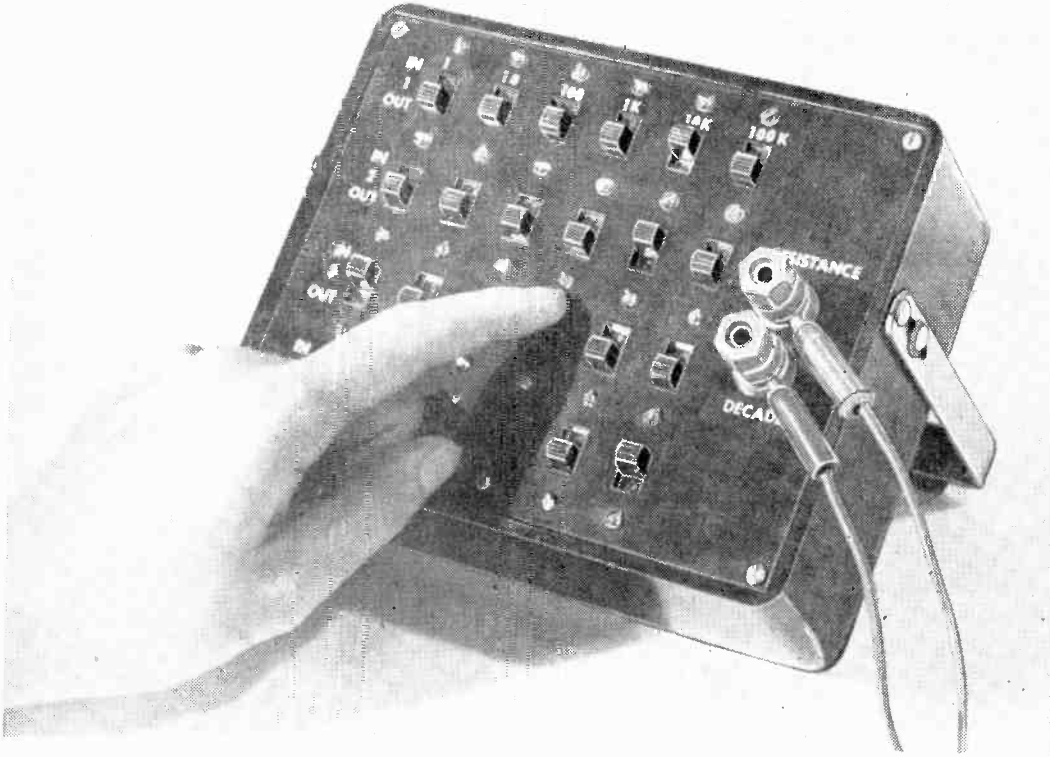
After selecting the oscillator capacitor values, reconnect the oscillator section of the variable, disable the antenna section, and follow the same method to determine the values of antenna capacitance.

With wiring and alignment completed, drill holes in the rear of the cabinet for the controls. A plate with markings adds a final touch. One feature of this design is that in addition to semi-automatic tuning for three stations at all times, one switch position is still continuously variable. You have not interfered with the basic design of the receiver but have extended its usefulness. You can change the pre-selected stations at any time, and in the event of a CD emergency, the instant tuning feature would prove very useful.

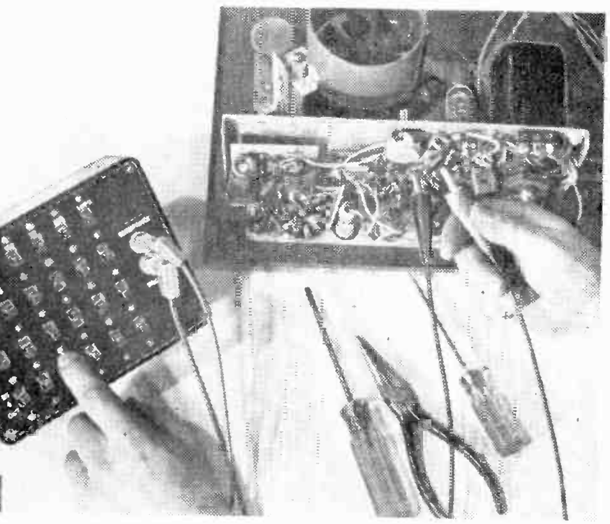
## Improving Crystal Performance

• Crystals that are sluggish in operation or fail to oscillate at all, can often be restored to duty by careful cleaning. First remove the crystal slab from the case, gently wash it in water and household detergent, then rinse. Hold the clean, dry crystal on the end of a strip of paper when replacing it in the case to prevent leaving oily deposits on the slab by handling it with your fingers.—Len Buckwalter.






# Low Cost DECADE BOX



1

At the flip of a finger, you get any value of resistance you want at 1% accuracy. Service of TV sets, radios and audio equipment is simplified . . . because you know the exact value of the part needed to get the circuit working.

**New design uses 10¢ slide switches and performs like its $80 cousins—but is handier and has an extra decade**

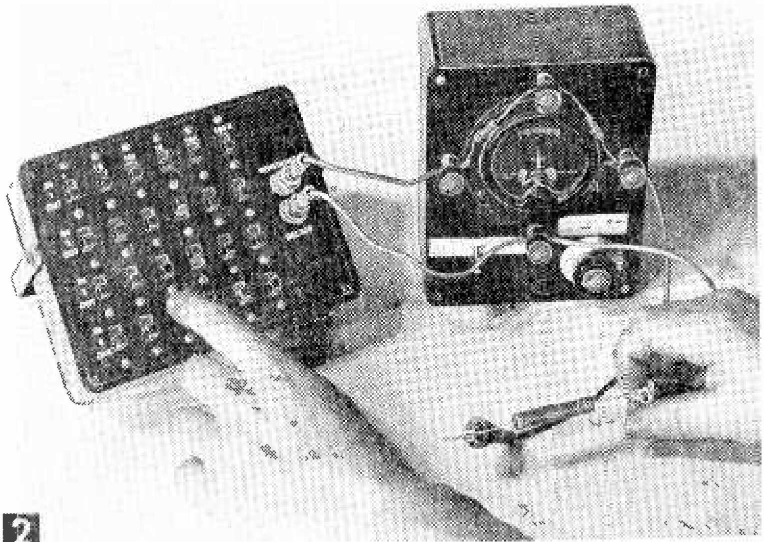
**By BRICE WARD**

NOW you can own a precision decade box for little more than the price of a good substitution box. Cost has been pared to the bone by using a novel switching arrangement that allows the number of precision resistors to be reduced and eliminates high cost rotary switches. The box gives resistance values from 0 to 1,111,110 ohms in 1-ohm steps, at 1% accuracy, with a switching layout that's fast to use.

Construction is easy. First lay out the switch mounting holes, Fig. 6. Carefully disassemble one slide switch if you are working from scratch, and—using the shell as a template—lay out the thumb-button holes. Drill the mounting holes for 4-40 screws and drill a starter hole in the corner of each thumb-button cut-out. Cut these holes out with a coping saw or jigsaw and smooth up with a file. Lay out and drill the binding post holes. (Kits are supplied with pre-drilled panels).

The switches should be checked with an ohmmeter to insure that they are in the *off* position (open), then mounted with the thumb-buttons at the IN position. Mount the switches, allowing the tabs to overlap, and secure them with screws and nuts.

Connect the resistors directly across each switch starting with the 1-ohm resistor at the top right of Fig. 4. Connect a piece of wire from the red binding post to the top contact of $S_1$ and solder it to



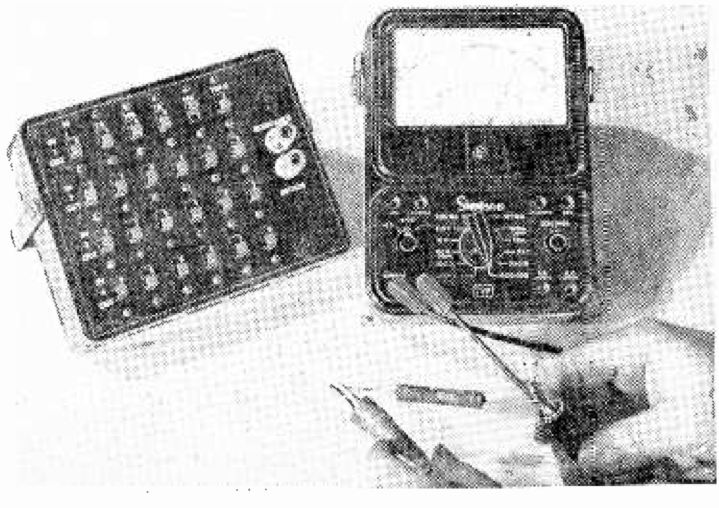
**2**

**Using the decade box as the known "leg" of a home-made Wheatstone bridge, you can check resistors for exact value.**

MATERIALS LIST—DECADE BOX

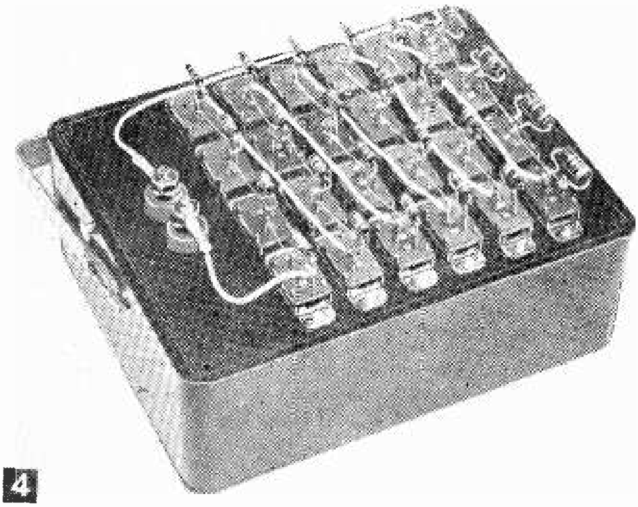
| Amt. Req. | Size and Description |
|---|---|
| 1 | plastic case. Davies type 260. 6 13/16 x 5 9/32 x 5/32" or equivalent |
| 1 | cover for above 6 1/2 x 5". Allied #86P289 |
| 24 | SPST slide switches. Carling 560A. Allied #34B422 |
| 4 | resistors, 10, 20, 30.1 and 40.2 ohms 1/2 watt, 1%, IRC Type DCC, Allied #1MM492 |
| 16 | resistors, 100, 200, 301, 402, 1000, 2000, 3010, 4020, 10K, 20K, 30.1K, 40.2K, 100K, 200K, 301K and 402K ohms, 1/2 watt, 1% IRC Type DCC, Allied #1MM493, or equal |
| 5 | resistors, 1, 1, 2, 3, and 3 ohms (1 and 3 in series for 4 ohms), 1 watt, 1% Dalohm RS-1B, or equal, Allied #2MM904 |
| 1 | red binding post, H. H. Smith Type 220R, Allied #41H330 |
| 1 | black binding post, Allied #41H335 |

NOTE: By special arrangement with manufacturers all of the above items are available as a complete kit with instructions. Send $14.95 for Kit A-11 to Kits Div., SCIENCE and MECHANICS, Dept. 872, 505 Park Ave., New York 22, N. Y. This unit may also be purchased completely assembled and tested for $18.95. Resistors supplied in kits will be 1% military or equal spec. types.



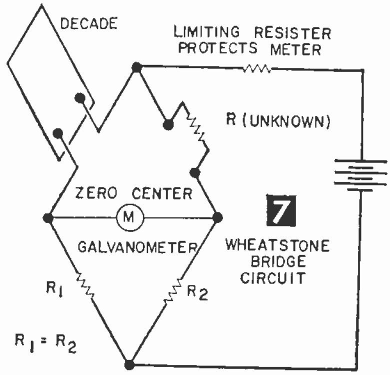
**3**

**You can also use the box with a standard VOM. The VOM acts as a comparator telling you whether the unknown resistor is more or less than the value set on the box.**



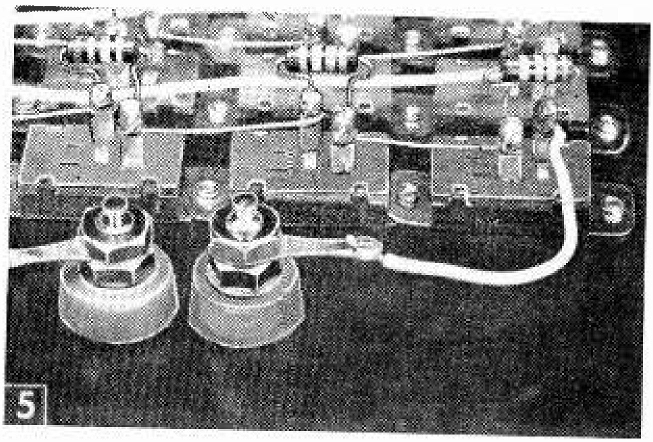
4

Above, Parts shown on this test model of the box are standard 10% commercial resistors. S&M Kits are supplied with 1% military type resistors. Below, How the assembly goes together. Be sure to use high quality solder and a clean hot iron. Cold joints can cause error.

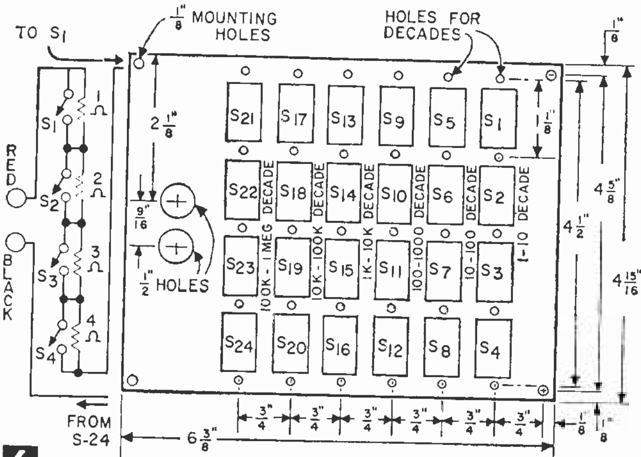



7

Wheatstone bridge circuit can be built for $5, and has dozens of uses in the electronic lab. Principle is that when currents in each arm of the "diamond" are equal, the zero center galvanometer in the middle will read zero. R1 and R2 must be of equal value and for accuracy should be in the same range as unknown resistor Rx.



5




6 DECADE BOX PANEL LAYOUT FROM BENEATH

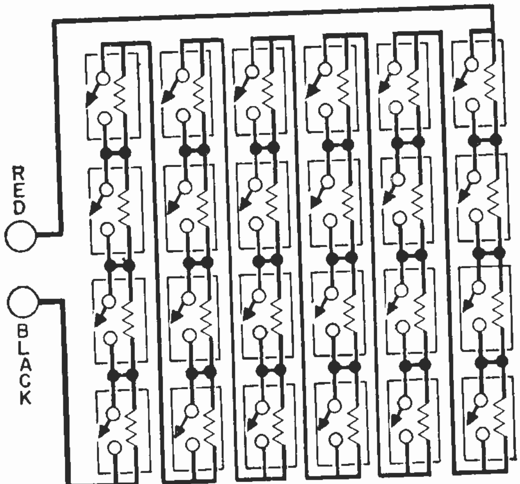
one resistor (1-ohm) lead. Put a jumper between the bottom contact of $S_1$ and the top contact of $S_2$ and solder both of these with proper resistor leads. Continue in this way to the bottom, then run a jumper from the bottom contact of $S_4$ to the top contact of $S_5$. Wire the remainder of the decades in the same way. The bottom of $S_{21}$ is connected back to the black binding post.

Counting with the box is simple. First place all switches in the OUT position. An ohmmeter should read zero when placed across the terminals. Now placing switch 1 to IN gives 1 ohm. Switching 1 OUT and 2 IN, gives 2 ohms. Two OUT and 3 IN gives 3 ohms and so forth. When 4 is reached, leave it in and put 1 back IN to get 5 ohms. Following this procedure makes it possible to switch swiftly in 1-ohm steps.

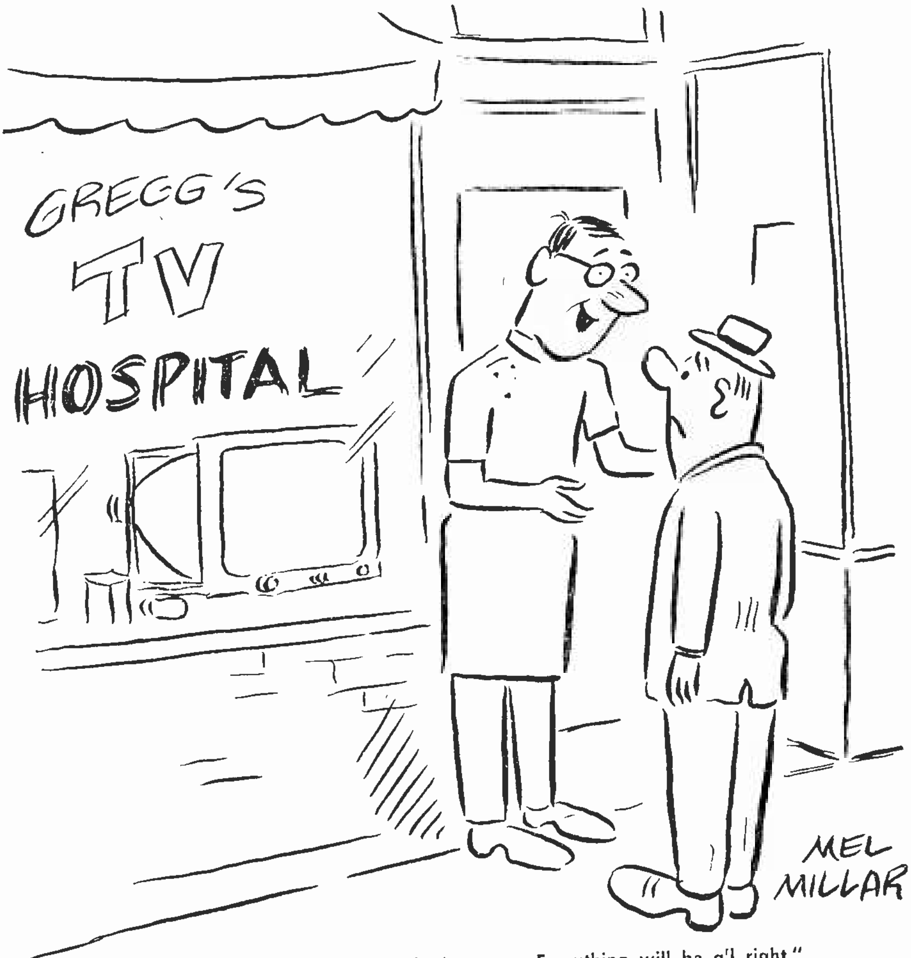
The same counting method is used on all decades, and counting down can be done by simply reversing this procedure.

To use the decade as one leg of a Wheatstone bridge (Fig. 7), get a rough determination of the resistance by switching the top switch of each decade in and out. If the meter deflects to one side of zero with 10K in and to the other side with 100K in, you can be sure the unknown resistance is between the two. Start at 10K then and count up. When the needle moves to the opposite side of zero, reduce the resistance by 10K and move to the 1K decade and repeat the procedure. This way you can determine the resistance of the unknown to within 1 ohm. Using the reactance formulas and a 1000-cycle oscillator in place of the battery, you can also determine capacity and inductance values. Charts will be needed here. Also, by computing the values and using a high sensitivity null detector for which several circuits have been published, you can determine capacitor and inductor values with 1 to 2% accuracy.

Setting a desired amount of resistance when using the decade as a substitution box is no problem. For example, to set 571.1K ohms, first throw all switches to the OUT position. Then set 400 and 100K in the 100K row to IN. On the 10K decade set 40K and 30K. Set 1K on the 1K row, and 100 on the 100 ohm row. After a little practice, you'll find this method beats using a potentiometer in bread-boarding circuits. Without measuring with an ohmmeter, you know immediately what your best resistance value is for the circuit under test.




8 DECADE BOX SCHEMATIC-VIEW FROM BENEATH

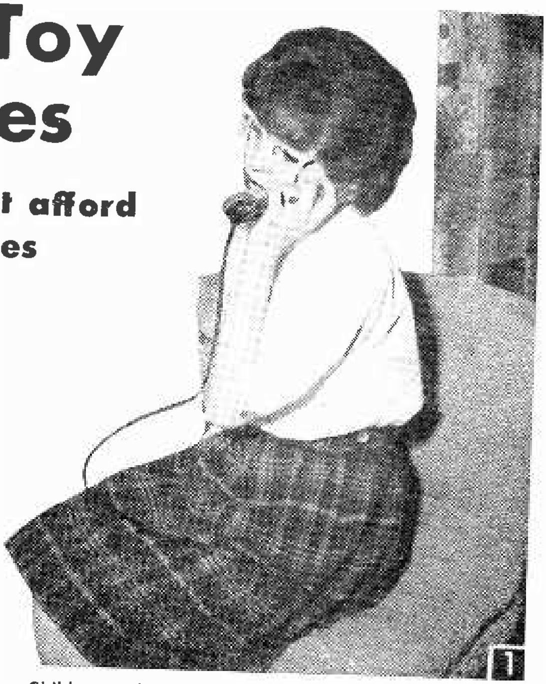



"Go home, get some sleep, don't worry. Everything will be all right."

# Electronic Toy Telephones

## For youngsters who can't afford to pay monthly rates

By HOMER L. DAVIDSON



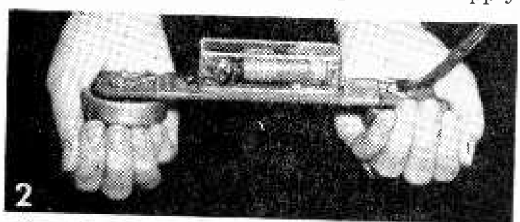
Children will be able to talk for hours on these toy telephones without running up your monthly bill.

SINCE the volume on most toy telephones is quite low, youngsters have to talk exceptionally loud in order to use them. This is not one of the best ways to keep peace in the household. By making a set of these transistor telephones, however, your ordinarily quiet and understanding children will not have to yell anywhere near as hard, and the household sound level will be much more comfortable—theoretically.

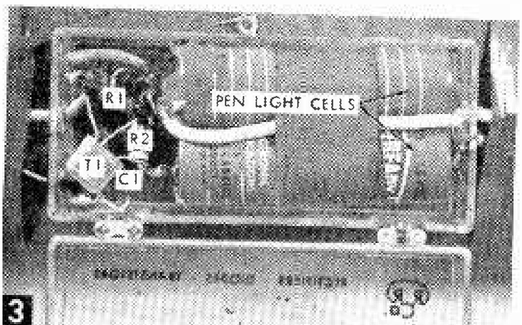
These handsets are built from regular receiver units which can be purchased for less than $1 a pair (see Materials List). The remaining parts are readily available, and two complete units can be quickly built for less than $7.

One receiving unit is used as a mike and the other as a receiver (Fig. 2). The mike receiver is capacity-coupled to the base of a low-priced audio transistor such as a 2N107, CK722, or ET3.

Resistor R1 furnishes the bias voltage for transistor T1, and two penlight cells supply the collector voltage. These cells are wired in series to a flat, 3-wire cable which, when connected by means of plug and jack to the other unit, turns the units on. If the volume is too loud, it can be decreased by increasing the resistance of R2 and R3 (see Fig. 7).



The mike and receiver mount on one side of the Masonite board, and the amplification box mounts on the other side.

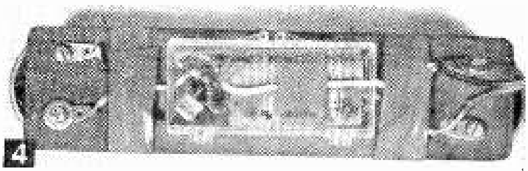



Internal assembly of parts.

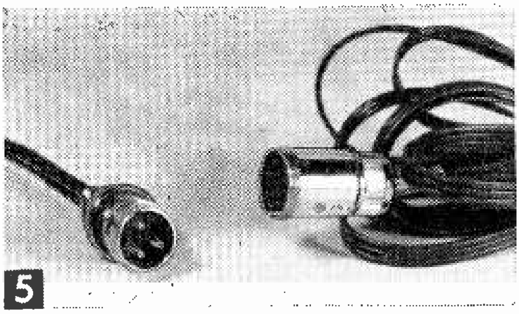
**House the Components** in a small plastic box as in Fig. 3. Tape the two penlight cells together, and place them in one end of the box. Solder transistor T1, capacitor C1, and resistors R1, R2 together, and place them in the remaining area of the box.

Use spaghetti and plastic tape to insulate the parts from shorting against one another. Also, in order to mount the plastic box to the handle, you will have to make some mounting holes in the box with the tip of your soldering iron. Complete the wiring by soldering the transistor circuit in series with the penlight cells.

**Mount Each Mike and Receiver** on a tempered piece of *Masonite* 2x6 in., which can usually be found in a scrap pile. In back of



The amplification box should be bolted to the board, and the external wires taped. None of the parts or sizes is critical.



**5** **Three-wire rotator cable and male and female connectors join the handsets together to activate them.**

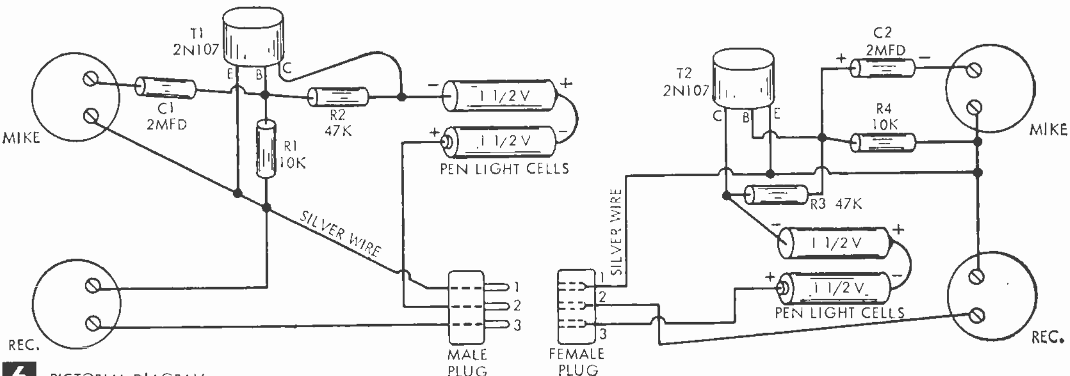
MATERIALS LIST—TOY TELEPHONES

| Desig. | Description |
|---|---|
| C1 | 2 mfd. 6-volt miniature electrolytic capacitor |
| C2 | 2 mfd. 6-volt miniature electrolytic capacitor |
| R1 | 10K, ½ watt carbon resistor |
| R2 | 47K, ½ watt carbon resistor (see schematic) |
| R3 | 47K, ½ watt carbon resistor (see schematic) |
| R4 | 10K, ½ watt carbon resistor |
| T1 | 2N107, CK722, or ET3 transistor |
| T2 | 2N107, CK722, or ET3 transistor |
| 4 | penlight cells (Eveready 1015) |
| 2 | plastic cases (Lafayette MS157) |
| Misc. | 3 prong male and female connectors, scrap pieces of Masonite for handles, nuts and bolts, 30 ft. or more of 3-wire rotator cable. |
| | The above parts can be purchased from Lafayette Radio, 111 Jericho Turnpike, Syosset, N. Y. |
| 4 | receiver phono units (AS568) available from Olson Electronics, 260 S. Forge St., Akron 8, Ohio; or Burstein-Applebee Co., 1012 McGee St., Kansas City, Mo. |

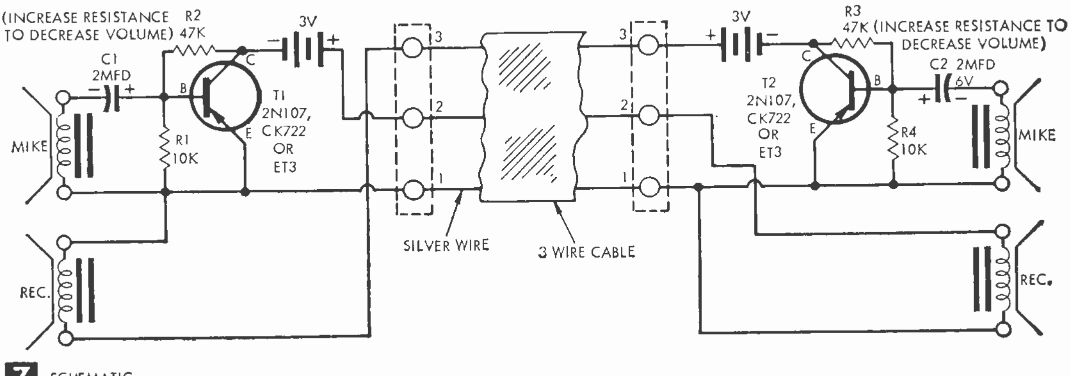
each receiving unit, you'll find two hookup screws with which to fasten the receiving unit to the Masonite handle. If they are not long enough, select a pair of longer screws and hold them in place by means of wire eyelets and washers.

Bolt the plastic box to the opposite side of the receiving units, and be sure to place the flat heads inside the box so that the batteries will fit snugly on top of them. Complete the wiring by connecting the amplification box to the receiver units, and then recheck the wiring with the schematic in Fig. 7. There is nothing more discouraging than to try out a newly built unit that does not work the first time.

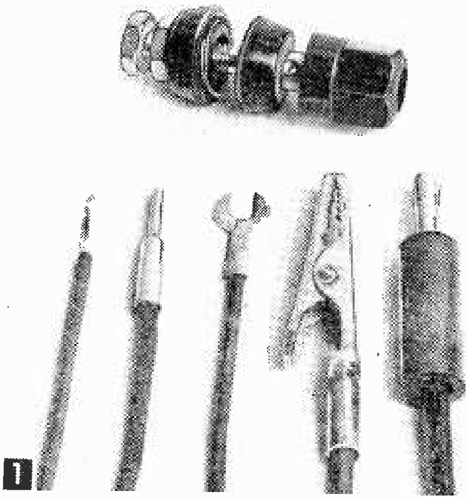
Since there is no on-and-off switch, or a talk-and-receive switch like that found on an intercom unit, simply plug the female and male connectors together, and the electronic telephones are ready to use. The current drain is very low, and the batteries will last for a long time. Even though the phones are primarily designed for kiddies, they can be used by anyone who wants to talk room to room, floor to floor, or house to house.



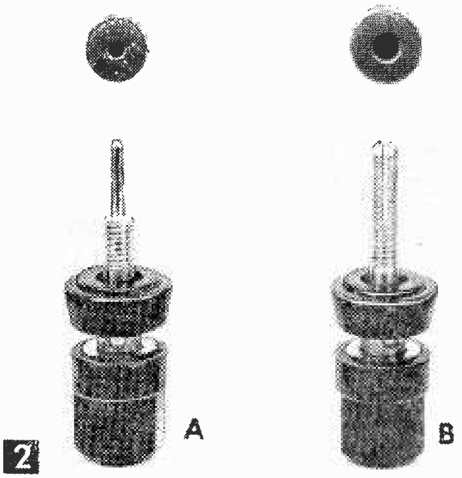

**6** PICTORIAL DIAGRAM




**7** SCHEMATIC




Typical 25¢ binding post designed to take the five types of connectors shown below it. Connectors are (left to right): wire lead, phone-cord-tip, spade lug, alligator clip, and banana plug.

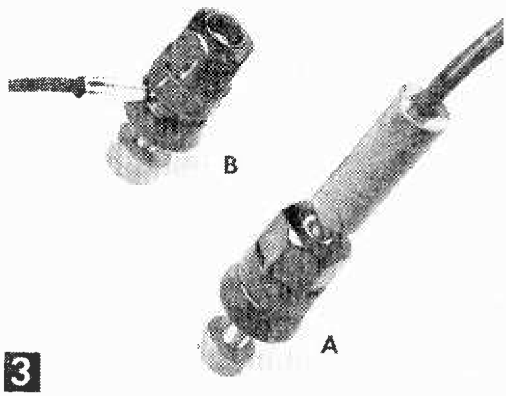



How to make two types of adapters by making simple alterations on the brass threaded shanks of the posts For post A, remove the loose hardware that comes with it and file the end of the threaded shank to the same diameter as the end of a phone-cord-tip. This allows the five-way post to be plugged into a standard phone-tip-jack. For post B, saw a lengthwise slot in the threaded shank of the post with a narrow-blade, fine-tooth hacksaw. Then file off a few threads so the shank makes a snug fit in a standard banana jack.

# Universal Adapters for Quick Connections

WITH these simple adapters, various types of leads and connectors can be instantly connected to phone-tip-jacks and banana jacks.

The adapters are made of five-way binding posts with their threaded shanks altered to fit the jacks. The binding posts plug into the jacks and various types of leads and connectors are then fastened to the posts. It's wise to make two of each type of adapter because the jacks are almost always used in pairs.—ART TRAUFFER.



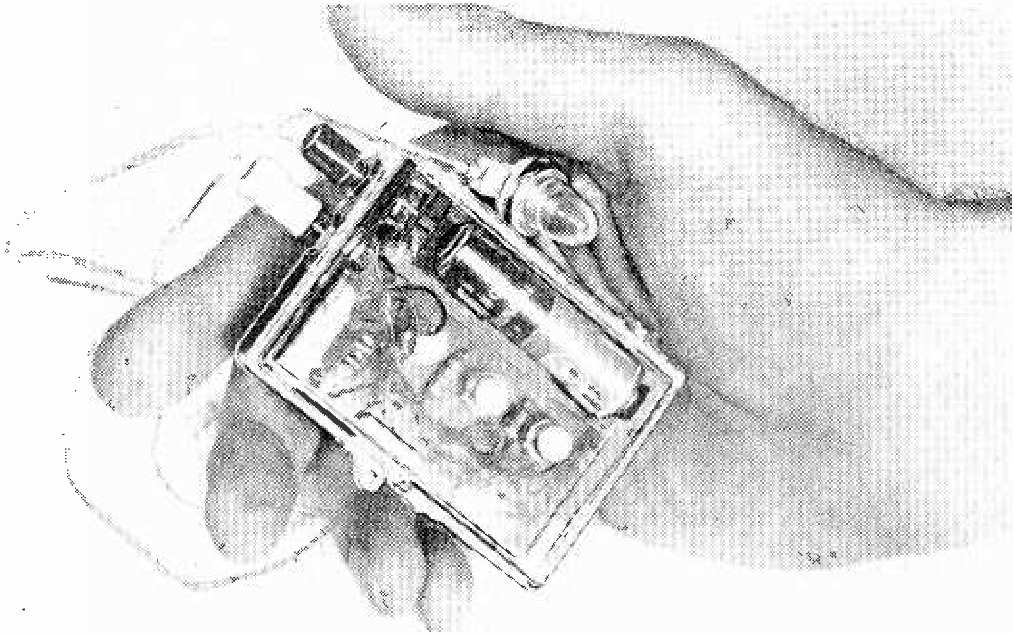

Two of several possible connections using these adapters: (A) An adapter allows a banana plug to be connected to a standard phone-tip-jack. (B) An adapter allows a phone-cord-tip to be connected to a standard banana jack. Wires, spade lugs, and alligator clips also may be connected to either jack.

## Test for Capacitor Ground Lead

• To determine which lead of an unmarked paper capacitor is the "ground" or outer-foil lead, try this kink. Connect the capacitor across the input of an operating audio amplifier, touch your finger to the lead connected to chassis-ground and note the hum output of the amplifier. Reverse the capacitor and again touch the lead connected to the chassis-ground, and note the hum from the speaker. The lead giving the least hum output is the ground lead of the capacitor.

## Keeping Tube Numbers Readable

• After tubes used in experimental circuits have been handled for some time, the type numbers on the glass envelope wear away and are almost impossible to read. To prevent this and keep numbers readable indefinitely, apply clear fingernail polish to the numerals when tubes are new. If the numbers on older tubes are illegible, apply ammonia with a piece of cotton and let it dry to bring numbers out clearly.—JOHN A. COMSTOCK.



1

Weighing only three ounces, the hearing aid fits comfortably in a shirt pocket. Amplification is 42 *db* or more, adequate for 75% of all cases of partial deafness.

# Pocket-Size Hearing Aid

## A low-cost answer for 15 million Americans who are hard of hearing

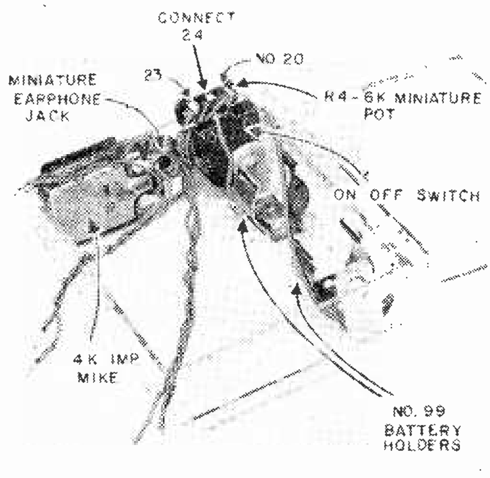
**By MORT FRIEDMAN**

Sidco Electronics

THREE transistors mounted on a printed circuit board provide a minimum of 42 decibels of gain in this new hearing aid design, yet the case is smaller than a king-size cigarette pack.

Based on 8 hours of use per day, the circuit, powered by a 10¢ pen light flashlight cell will operate for three days or more—a cost of only a third of a cent per hour. The hearing aid case has a switch for turning power *off* when not in use and a control that lets you adjust the volume to a comfortable sound level.

The microphone fits inside the case and has a frequency response of 300 to 4,000 cycles, providing satisfactory tone response for all but the most discriminating music lover. Such persons, if they are afflicted with poor hearing, are advised to use recently intro-




2

duced stereo earphones coupled directly into hi-fi output lines.

**The Tiny Amplifier** has uses other than the remedy of partial deafness. With the microphone mounted on a probe, the unit will do a fine job as a doctor's or mechanic's electronic stethoscope. You can hear the local sounds of defective parts within an engine or even pinpoint a water leak in a wall. Hunters have used hearing aids of similar amplification to detect the faint sounds of game at a distance, and a similar technique (mike in waterproof bag) has been used by fishermen to locate distant sounds of fish splashes.

The hearing aid can be built with stock electronic parts or by ordering a special SCIENCE and MECHANICS Kit (see Materials List). The case supplied with the kit is a high-

# The Use of Hearing Aids

By MARVIN B. WOLF, M. D.
and
MILTON J. SNEIDER, M. D.

Many doctors use this kind of tuning fork to compare the sensitivity to sound of each ear.

THE human ear is a complex organ. From the outer ear to the auditory nerve, every section of the ear must be in good condition, or a loss of hearing may result. Thus, there are many causes of total or partial deafness.

Injury or infection of any part of the outer, middle, or inner ear can cause deafness. Damage to the outer ear, usually from accidents or insect and animal bites, will reduce the ability of the outer ear to catch the sound waves. Damage or perforation of the ear drum by accident or infection will affect the vibratory movements of the drum and thus reduce hearing. Injury to the three small bones in the middle ear will interfere with the transmission of vibratory movements of the ear drum to the inner fluid in the cochlea and thus cause a loss of hearing. Injury to the auditory nerve, or damage to the nerve by poisons or toxins, as well as inflammation by germ infection, will reduce the transmission of nerve impulses to the hearing center of the brain.

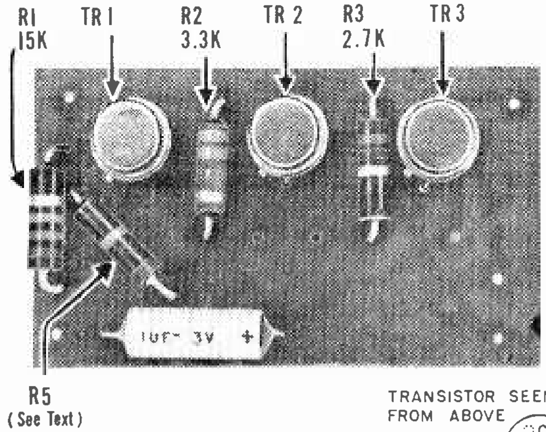
Physicians use an electronic instrument called an audiometer to measure the exact amount of hearing loss in both ears. As a general rule anyone with a hearing loss of 35 *db* or more (standard unit expressing relative power of sound) in the speech frequency in both ears is a suitable subject for a hearing aid. If hearing loss in the speech frequencies (*cps*) is 80 *db* or more, the patient usually will not benefit from artificial aid.

When impairment is moderate and the person is able to satisfactorily use an ordinary telephone, the hearing aid should be prescribed for the ear not used in telephoning. The aid should always be fitted to the better hearing ear.

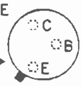
Air-conduction hearing aids (of the type shown in this article) should always be used in preference to bone-conduction aids, even in cases where tests show hearing for bone is better than air. The air-type aid is normally more efficient, especially in amplifying the higher frequencies. Thus, the sound is more natural, and the amplifier requires less power.

Bone-conduction aids are used in cases with perforation of the ear drums and suppuration, provided loss does not exceed 60 *db* in the speech frequency range.

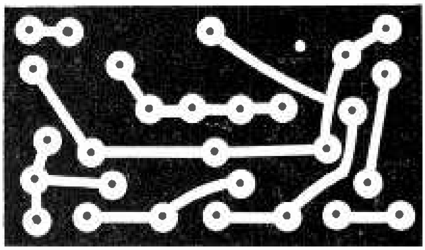
If you normally listen to the telephone with your left ear, use the hearing aid on the right side.



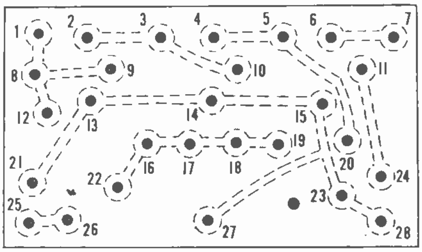

TRANSISTOR SEEN FROM ABOVE




**3 A** PRINTED CIRCUIT BOARD



**B** PRINTED CIRCUIT (BOTTOM)

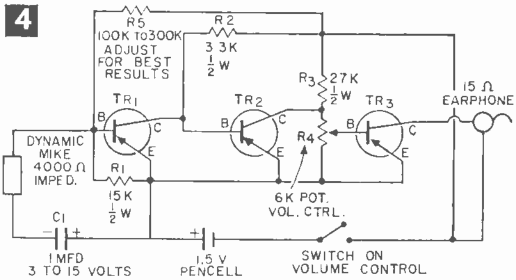



**C** PRINTED CIRCUIT (TOP VIEW)

TABLE A

| Part No. | PC Hole No. |
|---|---|
| R1 (15K brown, green, orange) | 8, 21 |
| R2 (3.3K orange, orange, red) | 3, 16 |
| R3 (2.7K red, purple, red) | 5, 19 |
| R4 (6K pot) | 24 to center lug<br>23, 20. See Fig. 2 |
| R5 (100-300K) see text | 12, 22 |
| C1 1-*mfd*, 3-volt | plus to 27<br>neg to 26 |
| TR1 | C to 2<br>B to 9<br>E to 13 |
| TR2 | C to 4<br>B to 10<br>E to 14 |
| TR3 | C to 6<br>B to 11<br>E to 15 |
| Mike Leads | 1, 25 |
| Earphone jack tip lead | 7 |
| Earphone jack outer lead | 18 |
| Switch leads | 17, Neg Bat. Clip |
| + Battery lead | 28 |

**4**




impact colored plastic and comes pre-drilled. If you decide to use your own parts, the first step is to drill the holes (Fig. 5). The microphone requires only one ¼-in. hole, but it is very essential that you mount it on a small piece of sponge rubber so that the mike does not press directly against the case at any point. The reason for this is that it would cause the mike to pick up surface noise.

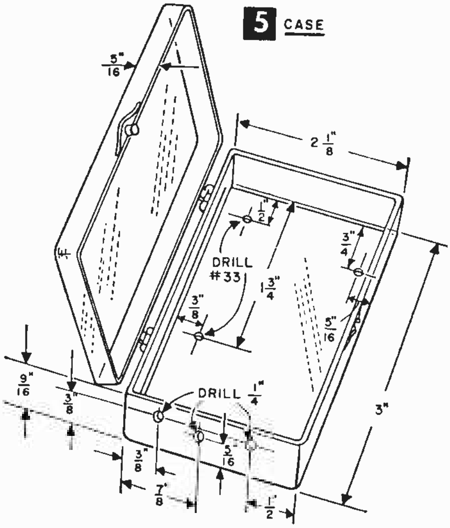
Strip ¼-in. insulation from nine 3½-in. lengths of insulated 24- or 26-gauge light, flexible, plastic-covered hook-up wire. Be sure to use a high quality printed circuit solder and a low wattage (25-40 watt) soldering iron to avoid overheating parts and printed circuit board. Solder two wires to the mike lugs; solder two lead wires to the earphone jack, three leads to the volume control lugs, and two leads to the switch on the back of the volume control.

MATERIALS LIST—MINIATURE HEARING AID

| Amt. or No. | Size and Description |
|---|---|
| R1 | 15K, ½ watt 10% carbon resistor |
| R2 | 3.3K, ½ watt 10% carbon resistor |
| R3 | 2.7K, ½ watt 10% carbon resistor |
| R4 | 6K miniature volume control, audio taper CTS #KX1214 or equal (*$.95) with on-off switch |
| R5 | 100 to 300K ½ watt 10% carbon resistor (Select value for best volume and tone. See text) |
| C1 | 1-*mfd*, 3-volt sub minature electrolytic capacitor |
| TR1, TR2, TR3 | transistors, PNP audio type, Sylvania #2N1265 or equal (*$1.77) |
| 1 | 4000-ohm miniature hearing aid microphone Knowles #1321 (*$11.95) |
| 1 | 15-ohm single midget earset; response 500-4000 cps |
| 2 | Keystone #99 Space Saver Battery holders |
| 1 | Eveready #915 penlight flashlight cell, or equal |
| 1 | 1½ x 2³⁄₁₆" printed circuit board, HR3 (*$1.95) |
| 1 | miniature earphone jack |
| 1 | plastic case, ⅞ x 2⅛ x 3 in. |
| Misc. | 3-4-40 mtg. screws and bolts, microphone cable (optional, see text) printed circuit solder, knob |

NOTE: By special arrangement with manufacturers all of the above items are available as a complete kit with instructions. Send $24.95 for Kit A9 to Kits Div., SCIENCE and MECHANICS, Dept. 873, 505 Park Ave., New York 22, N. Y. This unit may also be purchased completely assembled and tested for $34.95.

* The above parts are available separately from Sidco Sales, 4749 N. Rockwell, Chicago 25, Ill., postpaid.



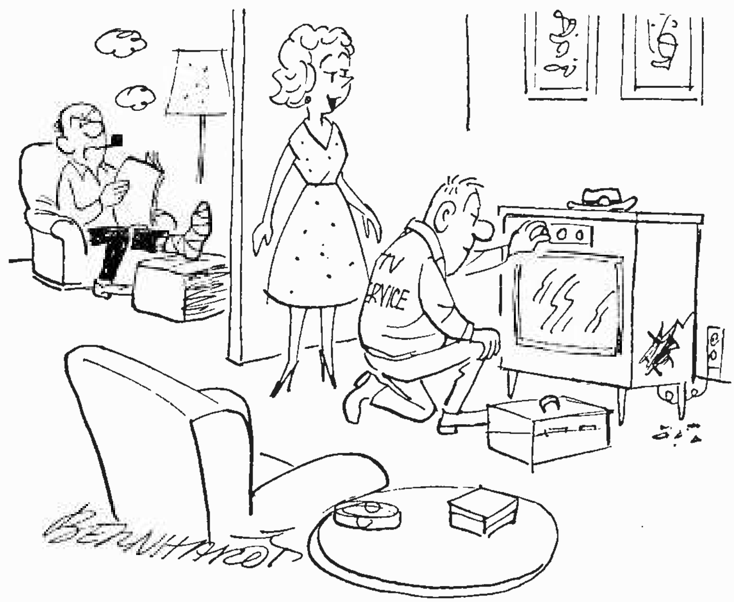

Now install the miniature volume control and the earphone jack in the case. Cut a ½ x ⅝-in. piece of ⅛-in.-thick sponge rubber. Use a sharp knife or razor to cut a 3/16-in.-diameter hole in the center. Use rubber cement to glue the sponge rubber washer to the microphone and the other side of the case. Mount the battery holders (Fig. 2) with two 4-40 x 3/16-in. pan head machine screws.

*Optional Note:* If you want to use the mike at a remote point, run a shielded cable out through a hole in case instead of the installation shown.

**Assemble and Wire** the printed circuit board in the sequence of Table A. The final steps are connections of mike, earphone, switch, and battery. Install the battery. Polarity must be correct; if you accidentally install the battery backward, though, no damage will result. The unit will just not work. Plug in the earphone, turn on the volume control, and you should hear good amplification of sounds in the room. If there is no sound, check all connections and soldered joints to find the mistake. Too hot a soldering iron can cause cracking or a rise of the thin layer of copper on the printed circuit board. The effect is the same as a broken wire. Find the break and overlay with a thin layer of solder.

Resistor R5, due to sensitivity variation in transistors, is not specified in the circuit. Kit parts are delivered tested and matched. If you are building your own, use a ½-meg volume control and a 0-50 milliameter to run this test. Complete all wiring except R5. Insert the volume control across terminals 12 and 22 and wire milliameter in series with battery. Adjust for maximum volume and clarity, at a current of 15 to 20 mils on the meter with the built-in volume control R6 set on full. The lower the reading on the milliameter, the longer the battery life. Read the setting on the volume control with an ohmmeter and use this value for resistor R5.

**Kit #A9 which includes all parts necessary to build the S&M Pocket Hearing Aid is available at $24.95. Send check or money order to Kits Div., Dept. 873, SCIENCE and MECHANICS, 505 Park Ave., New York 22, N. Y. All S&M kits are unconditionally guaranteed and may be returned for full refund if unsatisfactory within 10 days.**




**"Usually my husband can get it working again with a little kick."**

# The Companion

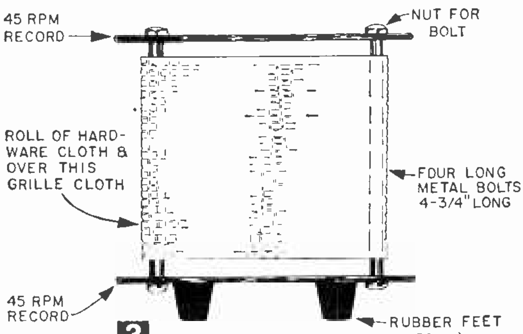
**A number of old 45-*rpm* records can be used to house a small radio that serves as a mate to the record changer of a young rock 'n' roller**

By HOMER L. DAVIDSON

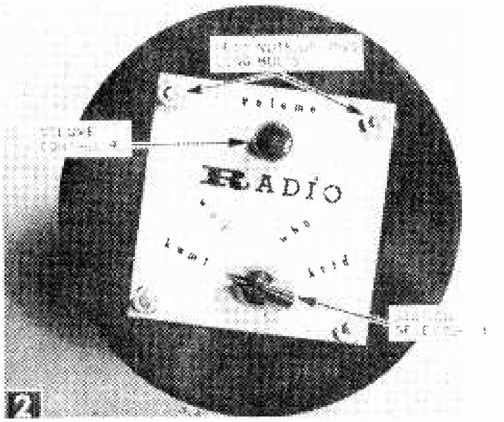
DESIGNED for the young teenager who wants to hear all of those up-to-the-minute records is this little one-tube radio, the Companion. It combines good performance with a snappy-looking cabinet built up from a stack of last year's worn out and overplayed records. Of course, it can also serve as an extra radio in order not to tie up Mother's kitchen radio and her favorite programs. Who knows—maybe Dad needs an extra radio to hear the ball games.

The Companion will pull in your local stations with just a small insulated wire strung around the room. By hooking a large outdoor antenna to it, you will be able to hear stations within a radius of 1000 miles.

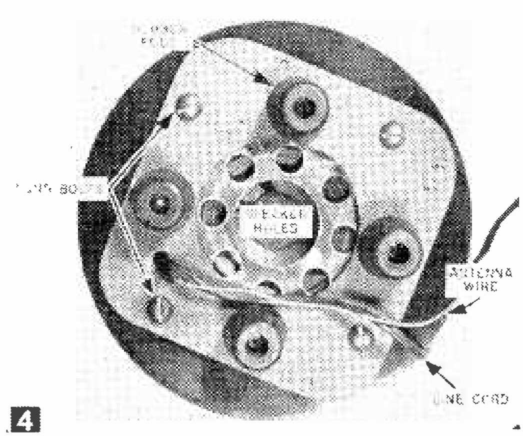
**How It Works.** The circuit of the small radio is very simple to follow. The 12AT7 tube employs one triode section as a regenerative detector and the second triode as an audio amplifier stage. A ferrite antenna coil in the grid circuit tunes with a 365-mfd variable capacitor, and a .0015-mfd capacitor couples the antenna to the antenna coil. This capacitor is very important for two reasons. It isolates the 117-vac line from a grounded antenna wire, providing the ac plug is plugged in the socket right. Also, if the antenna wire is hooked directly to the antenna coil, it will



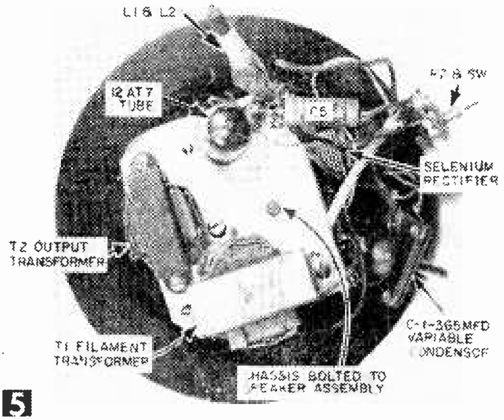

3 CABINET ASSEMBLY




Station letters rather than numbers can be pasted on for dial convenience.



Bottom view showing mounting of speaker.




**5**

Interior view showing placement of parts and wiring.

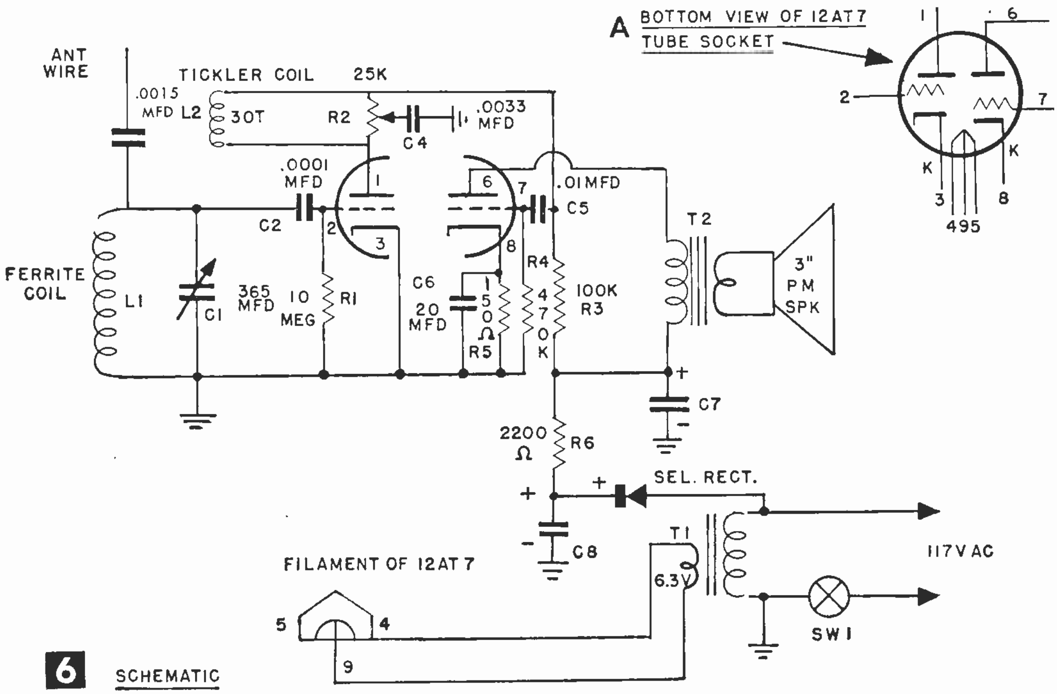
load down the circuit and only local stations will be available for selection.

The antenna coil is modified by adding a small tickler winding L2. Close wind approximately 30 turns of #28 enameled wire on the middle of the antenna coil. First place a layer of cellulose tape over L1 winding, looping the end to hold the beginning of coil L2. Leave the L2 coil ends about 3 in. long so they can be wired directly to the circuit. The size of the wire is not too critical. After the second winding is wound on the antenna coil, fasten it securely with cellulose tape.

Regenerative detection takes place between C2 and R1 and the first triode section of the 12AT7 tube. The tickler winding hooks directly to the plate of pin #1. Feedback is controlled by R2, and this was found to be the smoothest type of regeneration control. A .01-*mfd* audio capacitor couples the rectified signal to the second grid of the tube. R5 and capacitor C6 biases and filters the cathode voltage for the output stage. The plate circuit, pin #6, has an output transformer in the circuit to match the plate impedance of the audio stage. A 3-in. speaker is used here because of its small size and good volume.

The dc power supply consists of a small 65-*ma* selenium rectifier and resistor-capacitor network, and no 60-cycle hum is noted in the output of the small speaker. A small 6.3-volt power transformer is used as a step-down filament voltage source. In some cases a 10-watt resistor could be used here but, with a few more cents, better voltage regulation, less heat disintegration, and longer tube life can be had with a step-down transformer.

**Wiring and Parts Mounting.** Before wiring the parts into the circuit, mount them on the small metal chassis. For the speaker, I used a small 3-in. *Quam* permanent magnet type, since two small-tapped screw holes are provided in the rear of the PM assembly. Of course, another type of speaker could be used if the small chassis were made to bend down over the two speaker mounting holes. Make the small chassis out of aluminum and bend in an L shape as shown in Fig. 5. Drill all the holes, including those for the tube and variable capacitor, which can be reamed to suit their type mounting. A small drill can be employed, drilling a lot of small holes in




**6** SCHEMATIC

MATERIALS LIST—THE COMPANION

| Desig. | Description |
|---|---|
| C1 | 365 mfd variable tuning capacitor (Lafayette MS-214) |
| C2 | .0001 mfd ceramic capacitor |
| C3 | .0015 mfd ceramic capacitor |
| C4 | .0033 mfd ceramic capacitor |
| C5 | .01 mfd ceramic capacitor |
| C6 | 20 mfd, 25 WVDC electrolytic capacitor |
| C7 | 40 mfd, 150 WVDC electrolytic capacitor |
| C8 | 50 mfd, 150 WVDC electrolytic capacitor |
| R1 | 10 meg, ½ watt carbon resistor |
| R2 | 25K pot, linear taper (IRC Q11-120) with SPST switch (IRC 76-1) |
| R3 | 100K, ½ watt carbon resistor |
| R4 | 470K, ½ watt carbon resistor |
| R5 | 150 ohm, ½ watt carbon resistor |
| R6 | 2200 ohm, ½ watt carbon resistor |
| L1 | ferrite antenna coil (Lafayette MS-11) |
| L2 | 30 turns of #28 enamel wire wound over L1 |
| T1 | 6.3-volt step down ac transformer (Stancor P6134) |
| T2 | output transformer, 5000 ohms primary impedance, 3.2 ohms secondary impedance (Stancor A3877) |
| V1 | 12AT7 electron tube |
| 1 | 3-in. PM speaker (Quam) |
| Misc. | old 45 *rpm* records, metallic strip, cardboard, chassis, nuts and bolts, hookup wire, grille cloth |

a circle and punching out the small disk. Then take a round file or rattail file and smooth the edges.

Don't mount the antenna coil until last, as it is very easily broken off. Wire small capacitors and resistors into the circuit underneath the chassis, using the schematic (Fig. 6) as a guide. The antenna tuning condenser should have long leads soldered to them and wired to coil L1. Do this before mpunting the antenna coil. Place insulator spaghetti on all bare wires. After the chassis has been wired, place it into position upon the speaker assembly and fasten securely with two small bolts.

**Tuning Up.** It is always advisable to check over the wiring three times before the unit is fired up. If an ohmmeter is handy, check the resistance between C7 and ground to make certain that there is no short in the small power supply. The resistance should be above 5000 ohms. Visably inspect the wiring around the speaker terminals to see that they are not pushed down against the metal frame.

At this point the small record radio is ready to be tried out. Simply plug the ac cord into the socket and turn on the switch. A small rush should be heard from the small speaker. Fasten a 20-ft. piece of wire to the antenna terminal and turn the tuning condenser. You should be able to hear local stations. Advance the regeneration control and a squeal should be heard about halfway through its rotation. If not, reverse the two tickler coil leads. This will create correct feedback to coil L1 from the plate circuit. When the squeal is heard, turn the regeneration control down a small amount. The station should now be audible. A few tries will make one an expert in operating the regeneration control. It is surprising how many stations will come in with loud speaker volume. Adjust the ferrite coil for complete band coverage by pushing it up and down.

**Cabinet Construction.** The cabinet for the small radio is very unique since the major part of it is constructed from old 45-*rpm* records. Drill holes around the center hole of the record so that the sound from the speaker will pass through (Fig. 4).

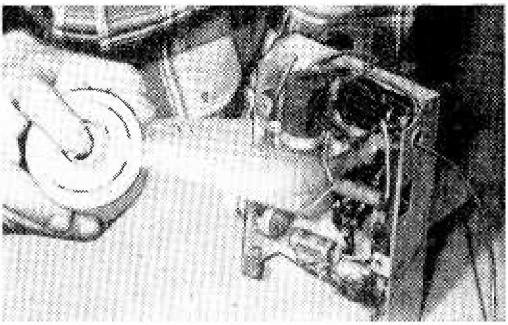
Fasten a *Masonite* board here to hold the four small legs. Four long bolts with aluminum spacers hold the records and cardboard spacers together. The cardboard spacers are the same size as the aluminum tape or binding material. This material can be bought at most hardware and dime stores. The aluminum spacers should also be of the same width as cardboard spacers. The records that are mounted in the center will have to have their centers cut out so the radio will set down inside.

Before you assemble the records to the cabinet, they should be cleaned and then finished with a clear spray or varnish, such as *Krylon*. Attach the small radio chassis to the bottom assembly before mounting the records and cardboard spacers. Mount the top record last, and attach the two small knobs.

Station letters were applied to the tuning dial instead of numbers. These can be taken from the daily newspaper and glued on the dial. Spray on a coat of Krylon or varnish, and the radio is ready to use.

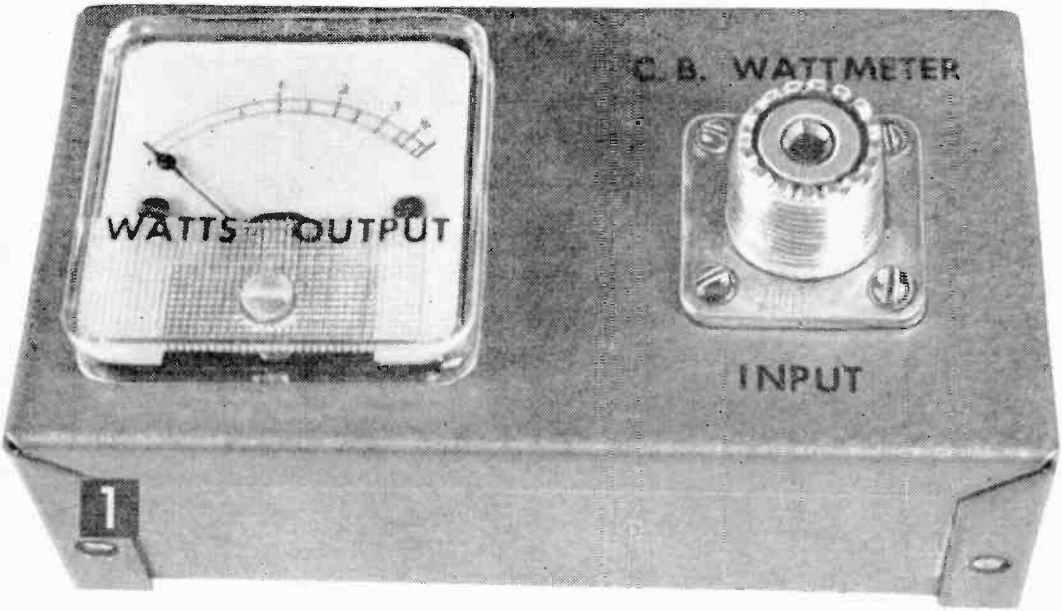
## Fire Extinguisher Chases Radio Bugs

• The chilling effect of a carbon dioxide fire extinguisher will help you locate a defective part in a radio circuit that plays erratically. Often a set works fine for a few minutes after you turn it on, and then suddenly misbe-

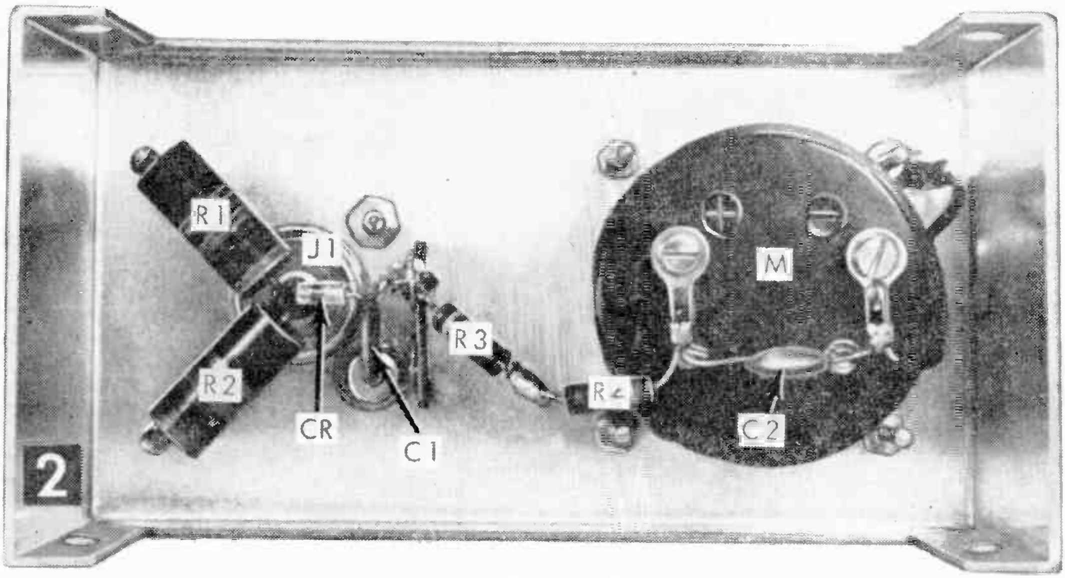


haves or goes dead. The trouble may be a part that expands with heat after current has been flowing through for a few moments. Spray suspicious parts with $CO_2$ gas one at a time. The intense cold will contract a defective component so it can work normally.

You can also use Charg-A-Can Freon #12 with a suitable adapter (sold by refrigeration supply houses). However do not use carbon tetrachloride fire extinguishers since the fumes are highly toxic.—T. A. Blanchard.




This compact wattmeter gives a direct reading of transmitter output when connected in place of the antenna.




Interior view of wattmeter showing placement of components.

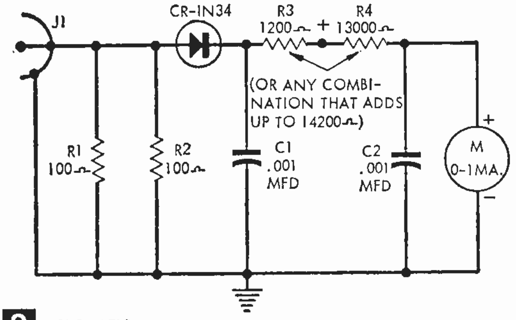
# A Citizens Band Wattmeter

## To determine the efficiency and performance of low power transmitters

By JOE A. ROLF, K5JOK

IF YOU have ever wanted to know how efficiently your low power transmitter is operating, this handy Citizens Band wattmeter will prove a valuable accessory. It is easily constructed at a cost of less than $15. By connecting the wattmeter in place of the antenna, your transmitter can be adjusted for maximum output into an impedance of the correct value.

Briefly, let's discuss the advantage of using




3 SCHEMATIC

| CALIBRATION CHART | |
|---|---|
| Watts Output | Meter Reading |
| 4.0 | 1.0 ma |
| 3.5 | .93 |
| 3.0 | .86 |
| 2.5 | .79 |
| 2.0 | .72 |
| 1.5 | .61 |
| 1.0 | .50 |
| .5 | .35 |

a wattmeter. Class D service presently is limited to an input of 5 watts to the transmitter's final stage of amplification, and it is extremely important that the transmitter be as efficient as possible in converting this power into RF energy. For consistent range, it is equally important that this efficiency be maintained.

Commercially built vacuum tube transceivers are designed to operate at about 50% to 80% efficiency. This means that only 2.5 to 4 watts of RF power is available at the antenna terminals. While there is not much you can do about improving the efficiency that a manufacturer has designed into his

MATERIALS LIST—CB WATTMETER

| Desig. | Description |
|---|---|
| C1 | .001 mfd, 600-volt ceramic disk capacitor |
| C2 | .001 mfd. 600-volt ceramic disk capacitor |
| CR | 1N34 diode |
| J1 | coax chassis jack (Amphenol 83-1R) or equivalent |
| M | 0-1 ma meter (Calrad CMO-32-2) or equivalent |
| R1 | 100 ohm, 2 watt, 5% composition resistor |
| R2 | 100 ohm, 2 watt, 5% composition resistor |
| R3 | 1200 ohm, ½ watt, 5% composition resistor |
| R4 | 13000 ohm, ½ watt, 5% composition resistor |
| | Note: R3 and R4 may be any combination of values which equals 14200 ohms |
| Misc. | 1½ x 2¼ x 4¼" Minibox (Bud CU-2116A), 1 single terminal tie strip, 2 small soldering lugs, 4 mounting screws, wire, and 1 connector to transmitter output consisting of short length of RG 58/U coaxial cable, 1 Amphenol 83-1SP connector or equivalent, and plug to match transmitter output |

unit, you can periodically make checks on this efficiency to ensure that it is maintained.

For instance, if you establish with a wattmeter that your transmitter is capable of 4 watts output, and a subsequent check reveals an output of only 3 watts, you know immediately that something has happened. Perhaps tubes are beginning to age, or the unit is no longer tuned properly. Reduction in efficiency, nonetheless, can be quickly determined with the use of a wattmeter, and without removing the transceiver from its cabinet.

The circuit shown in Fig. 3 is basically a dummy load 50-ohm antenna (resistors R1 and R2), and a simple RF voltmeter. When power from the output of the transmitter is applied to the 50-ohm load, the meter indicates the developed voltage. Since the power and resultant voltage are directly related, the meter can be calibrated in watts to show the transmitter output.

**Construct the Wattmeter** from Figs. 1 and 2. Mount the components in a 1½ x 2¼ x 4¼-in. Minibox. It is important to keep the leads of the load resistors, R1 and R2, and the diode, CR, as short as possible.

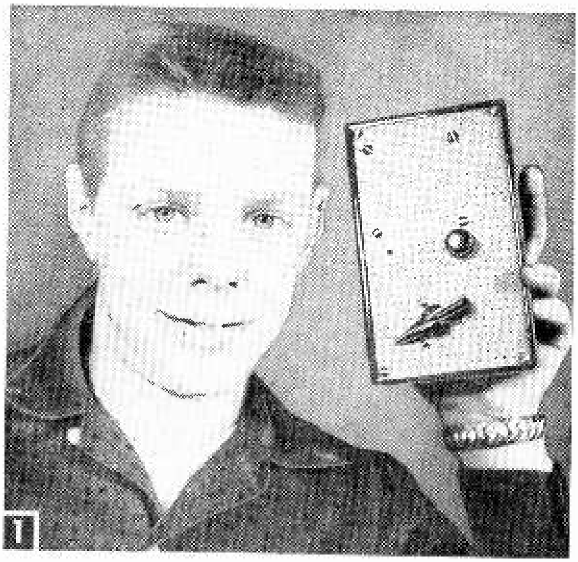
For accuracy, all resistors should be at least 5% tolerance. R3 and R4 are ½-watt 5% resistors with a total resistance of 14200 ohms. Any combination of available values totaling 14200 ohms can be substituted here. If available, 1% resistors will greatly improve the accuracy of 5% to 7% that can be expected from 5% values. Connect the wattmeter to the transmitter by means of a short piece of RG-58/U coaxial cable and proper fittings.

**Calibrate the Meter** with the aid of the calibration chart. If you wish, clip the chart out and paste it to the back of the Minibox. If you do this, it is a good idea to give the chart a coat of clear fingernail polish or other clear plastic coating for protection.

## Tracing Radio Interference

• Radio interference can often be traced to motor-driven electrical apparatus. Determine which one through a systematic method of elimination; that is, pull the switch on one appliance at a time and note whether the disturbing radio noise disappears. When the source has been located, you can decide upon the method of silencing. If the interference is a steady buzzing sound, a noise filter should be installed in the circuit. An intermittent noise would indicate the presence of static electrically caused by the movements or rotation of some part of the machine, within or against another. This type of interference can be silenced by grounding the machine frame to motor frame with a length of copper wire. Be sure to scrape clean the spaces where the wire will make contact at each end and fasten securely with bolts.—KEN HADENFELDT.

**Here's the transistor portable you've been waiting for. It operates on ordinary pen-lite cells, drives a loudspeaker with plenty of volume, has phone jack output for private listening, automatic volume control for smooth volume, and plenty of sensitivity. No outside antenna is required—and it can also be used as a tuner for a larger amplifier**



Small, but powerful, that's the transistorized superhet for which step-by-step building instructions are given in this article.

# Three-Transistor Superhet Portable

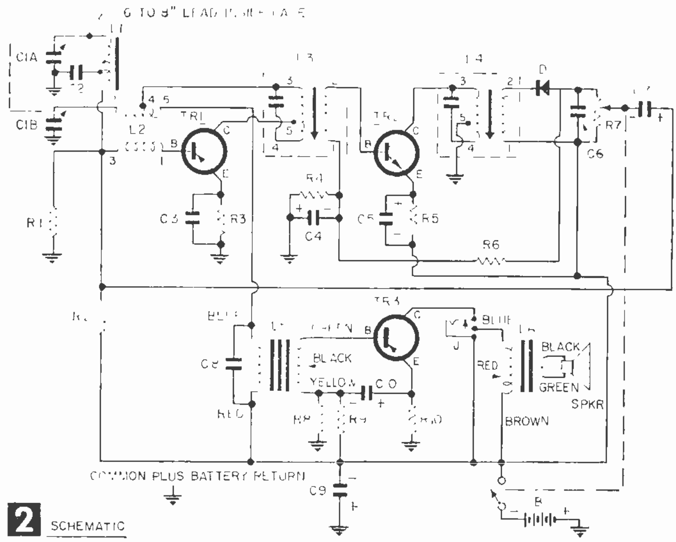
By FORREST H. FRANTZ, SR.

THE circuit diagram of this three-transistor superhet is shown in Fig. 2. The transistor TR1, RCA 2N412, does triple duty. The RF signal (550 to 1500 *kc*) which it receives from the antenna loop L1 and antenna tuning capacitor C1A is amplified and mixed with the oscillator signal. The oscillator signal, also generated by TR1, is always 455 *kc* above the received RF signal.

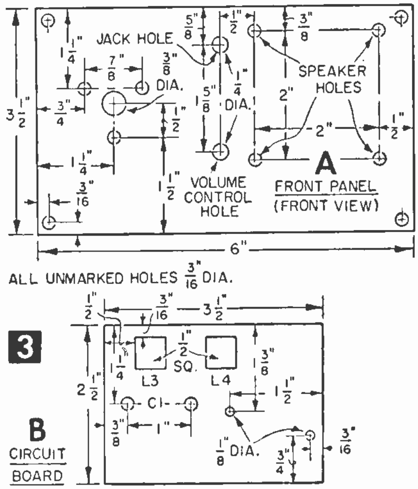
The oscillator tuning capacitor C1B is ganged to the antenna tuning capacitor so that oscillator and antenna tuning track. The signal through L3 is amplified by the IF amplifier transistor TR2. This transistor is a high-gain, high-frequency GE 2N168A. Diode D detects the signal after it passes through L4. Capacitor C6 filters out the RF signal components so that the signal across volume control R7 is audio frequency (AF). The signal is then passed through R6 and the audio is filtered out so that a *dc* bias proportional to the strength of the received signal is provided to control the gain of the IF amplifier TR2. The stronger the signal, the lower the gain of TR2. Thus, fading is minimized for reasonably strong signals. This is the automatic volume control (AVC).

The slider on volume control R7 picks off the audio signal for audio amplification. Transistor TR1 performs its third job as the first audio amplifier. It's possible to use the same transistor for the mixing oscillator and audio amplifier functions, since the frequencies are widely separated. The amplified audio output of TR1 appears across transformer L5 and is transferred to the audio output stage TR3 which amplifies the audio signal for speaker or headphone output.

This receiver has several outstanding features that make exceptional performance possible with only three transistors. The advantage of making TR1 do several jobs, for instance, is apparent. Further, the antenna loop L1 is the Miller 2003 high-Q loop which has a Q of 500 and this




**2** SCHEMATIC




unusually high Q builds up the signal and allows the tuning capacitor to select the desired station with considerable discrimination against interfering signals before the transistors even begin to go to work.

The audio output stage TR3 is transformer coupled to TR1—and two transformer-coupled audio stages have almost as much gain as three! Actually, a considerable amount of the available audio gain of TR1 is not exploited since the emitter bias resistor R3 of TR1 is not bypassed by a large capacitor. A large capacitor would increase the gain but would degrade the fidelity and create a tendency for the receiver to go into regeneration.

**Preparing Parts for Assembly.** First, cut out and prepare the front panel and the circuit board (Fig. 3). Cut the tuning capacitor (C1) shaft to a length of ½ in., the volume control (R7) shaft to a length of ¼ in. Remove the antenna loop from its mounting by cutting off the ends of the fiber retainer with tin snips; fasten the output transformer (L6) on the loudspeaker (see Fig. 5) by bending the transformer mounting lugs to fit around the magnet frame. A few drops of Pliobond or a similar cement placed under the transformer prior to mounting will steady it against the magnet frame.

Next, solder the connection lugs of the battery holder for series connection as shown in Fig. 4. Use rosin core solder only! Mark the battery end polarities to avoid making mistakes in connections or inserting batteries. Rotate the battery lugs with a pair of pliers and simply solder them together to make connections, and then fill with solder the surfaces of the eyelets which will contact the batteries.

Figure 5 shows the parts and wiring on the back of the front panel. Mount the loudspeaker (SPKR), volume control (R7) and the phone jack (J), and complete wiring as shown. Be cautious in soldering; too much heat can damage the volume control. The same precaution applies to the other components, especially transistors, in subsequent soldering.

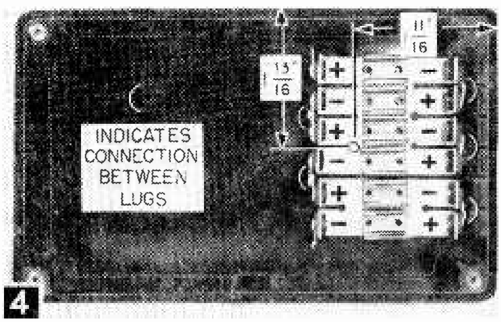
**The Wiring Board.** Top and bottom views of the assembled wiring board are shown in Fig. 6. Fasten L3 and L4 by inserting them in the holes and bending the mounting lugs against the back of the board.

Next, you will mount C1, L1 and L2. (Be careful not to let the screws which hold C1 pass through far enough to touch the plates of the capacitor; use washers or spacers if necessary.) Fasten L1 and L2 with Duco cement, give the cement time to set, then fasten L5 and T1 to the board.

The next step is to solder B of TR1 to terminal 1 on L2, C to terminal 5 of L3, pass E through the circuit board, and fasten TR1 against the case of L3 with a rubber band.

The remaining components are fastened to the circuit board as the wiring progresses. Be sure to connect the frame of C1 and the cases of L3 and L4 to the common plus battery return (designated by the "ground" symbol in Fig. 2). When circuit board wiring is completed, connect a lead 6 in. long to the common return for later connection to the plus terminal of the 9-*v* battery. The other lead from the circuit board is a 6 to 8 in. length of wire connected to C1A. The other end of this lead hangs free inside of the case after final assembly. This lead is essentially a short antenna which gives the set additional pick-up.

**Final Assembly.** There are five lead ends extending from the front panel (Fig. 5). The lead from the switch will connect to the minus terminal of the battery. The other four leads connect to the circuit board. The circuit board is joined to



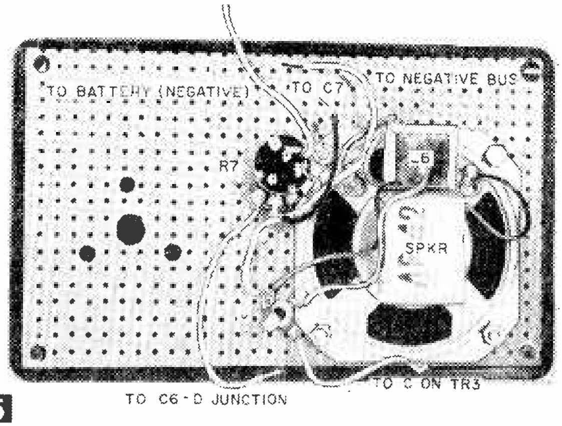

Battery-holder mounting in case, and connections.

the front panel by the tuning capacitor's (C1) three mounting screws. Place fiber washers or cardboard spacers 1/16-in. thick between C1 and the front panel when you join panel and circuit board.

Check for clearance between the circuit board components and the panel components. Particular items to watch are interference of TR2 with J, C9 with S on R7 and L6 with SPKR. Place the assembly in the cabinet to check fit and make any necessary adjustments in parts placement.

The leads from the front panel connect as follows: 1) The lead from the junction of R7, S and J connects to the circuit board minus line. 2) The lead from J connects to C of T3. 3) The lead from the "hi" terminal of R7 connects to the junction of D, C6, and R6. 4) The center terminal lead of R7 connects to the minus terminal of C7.

With these connections completed, adjust the slug of L2 flush with or just slightly below the coil form viewed from the back of the assembly. There are two trimmers on C1 which were intentionally eliminated from Fig. 2 to avoid confusion. These trimmers in parallel with C1A and C1B are provided to align the antenna and oscillator circuits respectively for proper high-frequency tracking. Open the antenna trimmer till the trimmer tension is nearly released (minimum trimmer capacity). Turn the oscillator trimmer full closed (maximum trimmer capacity), and then back the screw off ½ turn. Place the knobs on C1 and R7. (You can provide a calibrated dial made of paper and covered with plastic for C1 later if you wish). With S off, connect the leads from the assembly to the battery to complete wiring and assembly. These leads should be about 6 in. long to allow easy removal of the assembly from the case. To prevent the screws which hold the battery holders in place from scratching furniture, fasten rubber grommets to the back of the case with Pliobond cement.



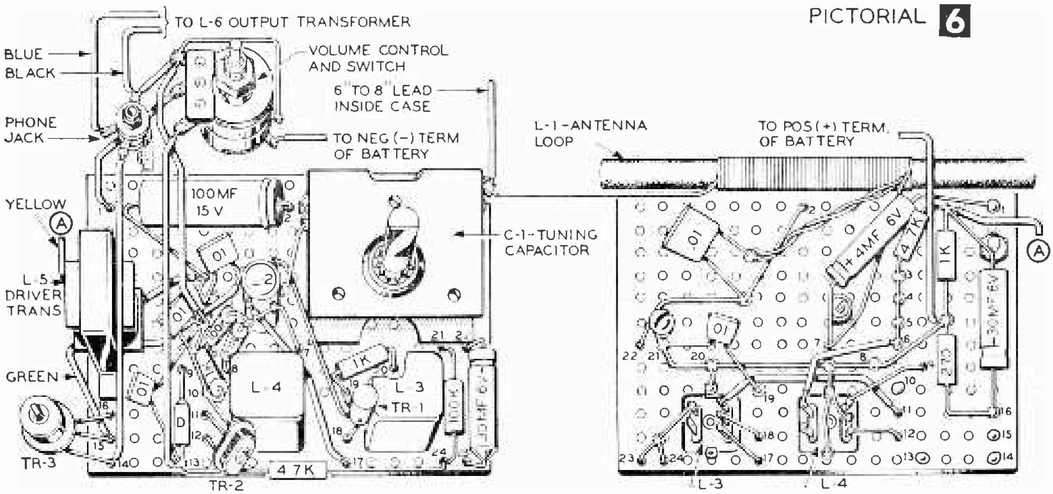

5

Back of front-panel view, showing connections.

**Tune-Up.** If you have a milliammeter, connect it across the terminals of switch S. The meter should read between 6 and 15 *ma* if all is well. Don't worry if the set motorboats when you make this measurement. If the current exceeds 15 *ma*, look for a short or an incorrect connection. If the current is less than 6 *ma*, the trouble is probably low battery voltage or an incorrect connection.

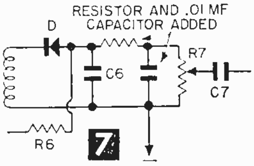
Assuming all is well at this point—or that you don't have a meter to make this measurement—turn the set on and turn the volume control about ⅞ths up (clockwise). Maximum volume does not occur at the full clockwise position of the volume control. This is a normal characteristic of the reflex circuit. (The term reflex is applied to a receiver which uses one transistor or tube to amplify both RF or IF and AF signals). With the volume control turned approximately ⅞ths full clockwise, rotate the tuning dial slowly. If you're in a metropolitan area or within about 10 or 15 miles of a large station, you'll probably pick up a signal even though the set is not accurately aligned. But if you don't pick a station up, there's no cause for alarm because the IF transformers (L3 and L4) may be way out of adjustment. If you pick up a station you can feel reasonably sure the wiring is correct. If you can't pick up a station, the presence of noise of any kind from the speaker indicates that at least part of the audio is working properly. In either case; you're ready to try alignment.

PICTORIAL 6




TOP VIEW OF PERFORATED BAKELITE MOUNTING BOARD

BOTTOM VIEW OF PERFORATED BAKELITE MOUNTING BOARD




The steps in the alignment procedure are: 1) Adjust the IF transformers. 2) Adjust the tuning capacitor trimmers at the high frequency end of the broadcast band. 3) Adjust the oscillator coil slug at the low frequency end of the band. 4) Repeat step 2. A signal source is required to carry out the alignment procedure. This source may be an RF signal generator or it may be an ordinary broadcast receiver if you don't have, or can't borrow a signal generator.

To adjust the IF transformers, connect the high side of the signal source through a .01 *mfd* capacitor to the stator of C1A (the antenna terminal), and the low side to set ground. With the signal source tuned to 455 *kc*., adjust the slugs of L3 and L4 for maximum output. Keep the signal from the source so weak that you can barely hear it (to minimize AVC action). Adjust the volume control to the point where the signal is loudest. The slugs of L3 and L4 are accessible through the holes in their bottoms. Use a small screwdriver, preferably one with very little metal in it such as a radio-TV serviceman's alignment tool.

After IF alignment is completed, disconnect the signal source.

You should easily be able to complete the remainder of the alignment procedure with broadcast station signals. Tune in a weak station between 1300 and 1450 *kc*. Increase the antenna trimmer capacity. If this increases the speaker output, adjust this trimmer for maximum speaker output. If the volume decreases, repeat the procedure.

Next, tune the receiver to a station between 550 and 650 *kc*. Detune C1 slightly to one side and adjust the slug of L2 for maximum output. If this output is greater than the previous output, repeat the process till the most sensitive point is found.

If the output is less than the previous output, detune C1 in the other direction and adjust L2 till the point of maximum output is found.

Finally, repeat the alignment procedure at the high-frequency end of the band. This is necessary since the adjustment of L2 has some influence on the high frequency end of the band, too. Capacitor C1 may be tracked across the broadcast band by bending the outer plates of C1A, but the process is tedious and not always worth the effort.

You may experience oscillation at high volume control settings, but this oscillation will occur beyond the actual maximum volume point and is therefore harmless. But if you wish to eliminate it, add a resistor and .01 *mfd* capacitor in the volume control circuit as shown in Fig. 7. The resistance value should be determined experimentally. It will be between 500 ohms and 1K in most cases.

This three-transistor portable may be used as an amplifier tuner by connecting a 10K resistor from C of TR3 to the negative voltage line. This resistor provides *dc* return for the collector of TR1 when a plug is inserted in the jack. If the amplifier to be used with the tuner does not have a capacitor in series with the input, provide one of about 0.1 *mfd* capacity. The connection of the 10K resistance will have negligible effect on the loudspeaker or headphone performance of the set. The Lafayette MS-281 plug fits the jack and should be used in making the amplifier connection cable.

The receiver may be equipped with a calibrated dial to simplify station finding. The calibrations may be painted on the panel face or many be placed on paper with India ink. A sheet of celluloid or clear plastic placed over the dial scale will protect it.

Both the scale and its plastic protector can be held in place by the three screws which fasten the variable capacitor.

The tone and volume of the set can be improved by placing a thin sheet of cardboard between the back of the panel and the components.

MATERIALS LIST—THREE-TRANSISTOR PORTABLE SUPERHET

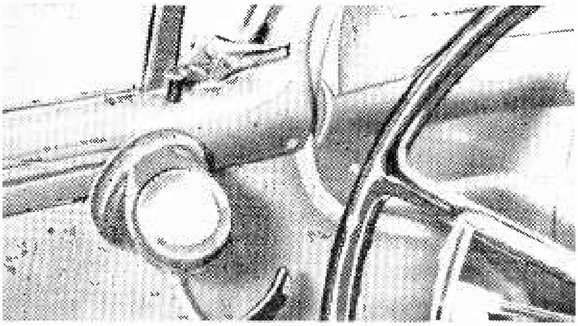
| Desig. | Description |
|---|---|
| R10 | 270 ohms |
| R3, R5, R8 | 1K |
| R6, R9 | 4.7K |
| R1 | 27K |
| R2, R4 | 100K |
| (all resistors, ½ watt, ±20%) | |
| R7-S | 5K miniature volume control with switch (Lafayette VC-27) |
| C2, C3, C5, C6, C8 | .01 mfd subminiature square capacitor (Lafayette C-612) |
| C7 | 4 mfd, 6v ultraminiature electrolytic capacitor (Lafayette CF-101) |
| C4, C10 | 30 mfd, 6v ultraminiature electrolytic capacitor (Lafayette CF-104) |
| C9 | 100 mfd, 15v ultraminiature electrolytic capacitor (Lafayette CF-126) |
| C1 | 2-gang tuning capacitor, A-123 mmfd, B-78 mmfd (Lafayette MS-261) |
| L1 | miniature antenna loop (Miller 2003) |
| L2 | transistor oscillator coil (Lafayette MS-265) |
| L3 | 1st IF transformer, 455 kc (Lafayette MS-268) |
| L4 | output IF transformer, 455 kc (Lafayette MS-269) |
| L5 | transistor driver transformer 10K:500 ohms (Lafayette TR-96) |
| L6 | transistor output transformer 500:3.2 ohms (Lafayette TR-95) |
| TR1 | transistor (RCA 2N412) |
| TR2 | transistor (GE 2N168A) |
| TR3 | transistor (GE 2N241A) |
| D | diode (Raytheon 1N66) |
| B | 9v battery—6 penlite cells in series (RCA VS074) |
| J | miniature phone jack (Lafayette MS-282) |
| SPKR | 2½" PM speaker, 3.2 ohm (Lafayette SK-65) |
| 1 | 2-cell battery holder (Lafayette MS-138) |
| 1 | 4-cell battery holder (Lafayette MS-170) |
| 1 | miniature perforated board for front panel (Lafayette MS-305) |
| 1 | miniature perforated board for chassis (Lafayette MS-304) |
| 1 | miniature knob (Lafayette MS-185) |
| 1 | pointer knob (Lafayette KN-40) |
| 1 | 2 x 3¾ x 6¼" Bakelite case (Lafayette MS-216) |
| | For earphone listening, use a 2K earphone (Lafayette MS-268) |

Parts available from Lafayette Radio, 165-08 Liberty Ave., Jamaica 33, New York.

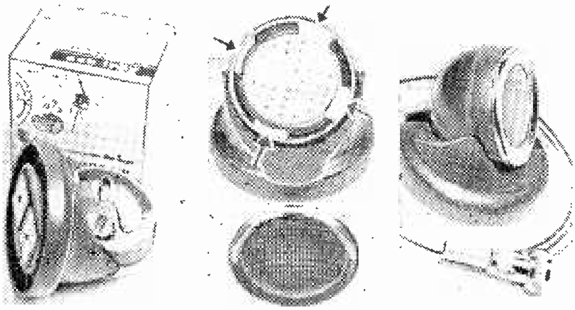
# Mobile Mike Mounts Anywhere

## A 98¢ magnetic ash tray makes the base

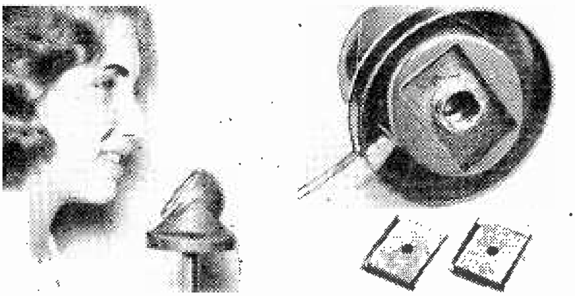
By ART TRAUFFER



Use a layer of thin tape over the magnet surfaces to keep from marring metal surfaces. Location of the mike improves CB transmission.



The mobile ash trays (left) come in various colors. Shock mount the mike (center) with four small pieces of powder puff plastic foam. Completed unit (right) shows slot cut in rear of base to clear cable.



To mount the mike on a table or floor stand, remove the magnets and install a 5/8"-27 inside threaded cable connector coupling ring.

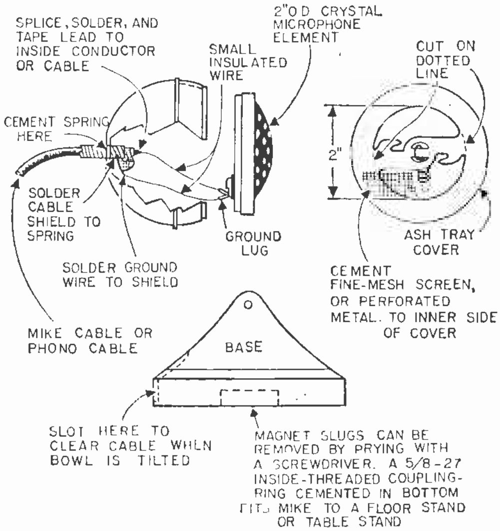
MATERIALS LIST—MOBILE MIKE

| Amt. Req. | Size and Description |
|---|---|
| 1 | mobile magnetic ash tray (Sears, Roebuck Stores, 98¢) |
| 1 | 2" diameter crystal mike element or phono cable (Lafayette Radio PA-27, $1.49) |
| | lengths of light-weight mike cable (Belden #8411) |
| 1 | Amphenol 75-MC1F mike cable connector, or equal |
| 4" | 22 or 24 ga. flexible, insulated wire (for connecting mike element to cable) |
| 1" | 3/16" O.D. spring (cut from dime store curtain spring) |
| 2" | square of fine-mesh screen, or perforated metal |
| Opt. | coupling-ring having 5/8"-27 inside threads, removed from mike cable connector |

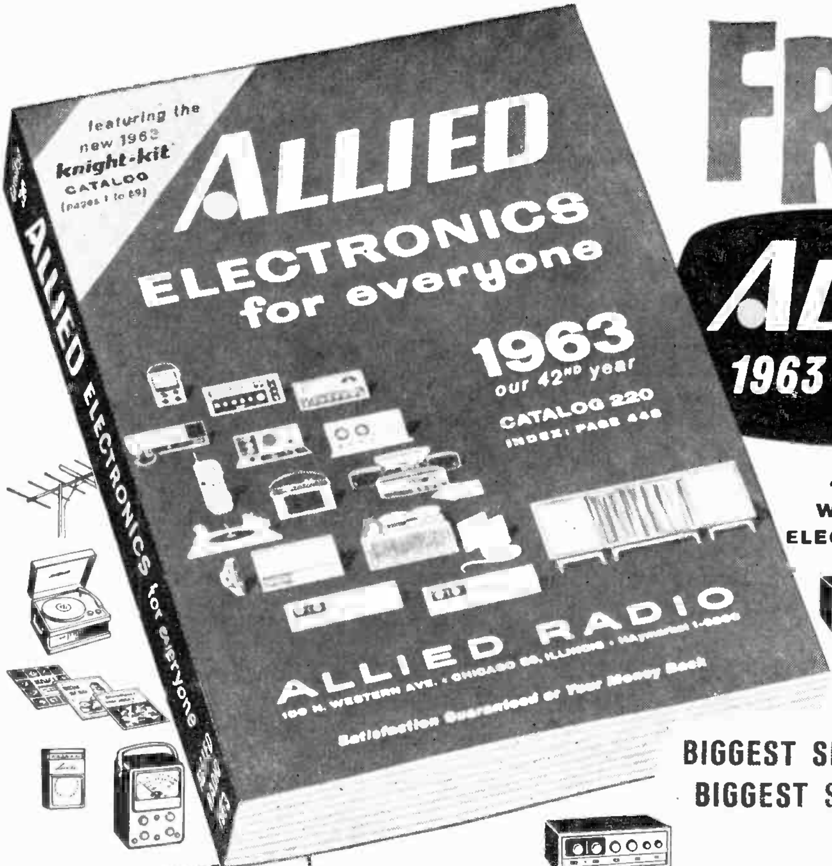
THE unusual feature of this mike is that you can instantly mount it at any point on a metal surface. If you are on the air with a mobile ham station or a Citizens Band transceiver, the mobile mike will free your hands for driving and be located at optimum distance for good transmission.

If you use a tape recorder in car, office, or shop, you'll find you can hang your mike on any nearby steel object. The magnets will adhere to a cabinet, a pipe, a drafting lamp, or to the steel variety of venetian blind.

If you should be in the rare place where there is no iron or steel, you can still hang the mike by using a keeper plate made of a small scrap of sheet iron or steel. The plate can be taped, nailed, or cemented to a wall, or can be concealed behind thin paper, glass, or veneer.




Solder the mike to the cable first. Then slip the spring over the cable and feed through the hole in back of the bowl from the inside. Use sponge rubber or foam to shock mount the mike. Wire the cable connector last.




# FREE

## ALLIED 1963 CATALOG

**464 PAGES**
**WORLD'S LARGEST ELECTRONICS CATALOG**

**BIGGEST SELECTION**
**BIGGEST SAVINGS!**

## knight-kits®
**best in build-your-own!**

"Span Master"® world-wide radio

100-in-1 Lab Kit

CB Radio

Electronic Tachometer

SEE MORE THAN 100 GREAT KNIGHT-KITS!

## SAVE MOST ON:

- Everything in Stereo Hi-Fi
- New All-Transistor Stereo
- KNIGHT® Super-Value Hi-Fi
- Tape Recorders & Tape
- Citizens Band 2-Way Radios
- Transistor & FM-AM Radios
- Phonographs & Records
- Ham Station Equipment
- PA Systems, Intercoms
- Latest Test & Lab Instruments
- TV Tubes, Antennas, Accessories
- Parts, Tubes, Transistors, Books, Tools

**ALLIED EXCLUSIVES:**
See special products and values available only from Allied—plus all the famous makes!

FREE

**NO MONEY DOWN:**
Over 50% More Buying Power with your Allied Credit Fund Plan!

*Satisfaction guaranteed or your money back*

# ALLIED RADIO

*The World's Largest Electronic Supply House*

**SEND FOR YOUR COPY TODAY!**

ALLIED RADIO, Dept. 716-J
100 N. Western Ave., Chicago 80, Ill.

☐ Send FREE 1963 ALLIED Catalog

Name ____________________
PLEASE PRINT

Address ____________________

City ____________ Zone ____ State ____

# Dry Battery Tester-Charger

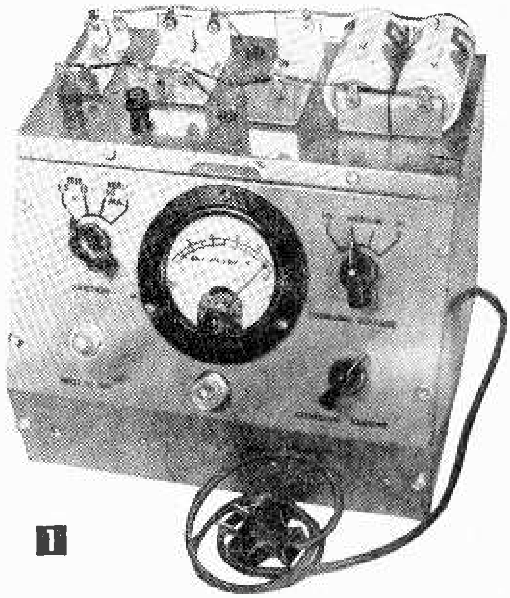
**A single unit to test and charge flashlight, transistor radio and other small batteries**

By W. F. GEPHART

RECHARGING or boosting small dry batteries can be worthwhile if you have several flashlights, battery radios or other battery-powered equipment. Properly used, a charger can triple or quadruple the lift of batteries, making the investment in a charger worthwhile. The unit shown in Fig. 1 also includes a tester to show when "recharging" is desirable. (Since dry batteries are essentially primary cells in which a chemical reaction takes place, true recharging is not possible. However, rejuvenation, which will extend the life of the cells, *is* possible. We'll call this recharging.)

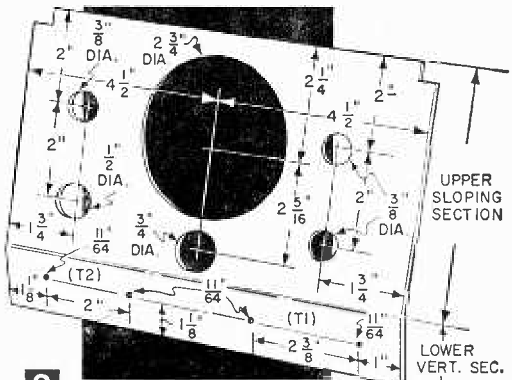
Recharging must be done before the battery is completely exhausted. New batteries usually read about 1.5 *v* per cell (without load) on the average meter. Under normal load (about 25 *ma* for a battery made up of penlight cells, and about 150 *ma* for the larger flashlight batteries) the voltage of a fresh cell should not drop more than 10%. Thus, a type "D" flashlight battery in top condition ought to test at 1.5 *v* or better without load, and not less than 1.35 *v* with a 150 *ma* load. When it drops below these levels, it should be recharged. Recharging is not too effective when the voltage (with or without load) is below two-thirds of the new-condition voltage.

Bear in mind, too, that the battery must be placed in service promptly after recharging. The shelf life of recharged batteries is short (probably due to the limited chemical action that takes

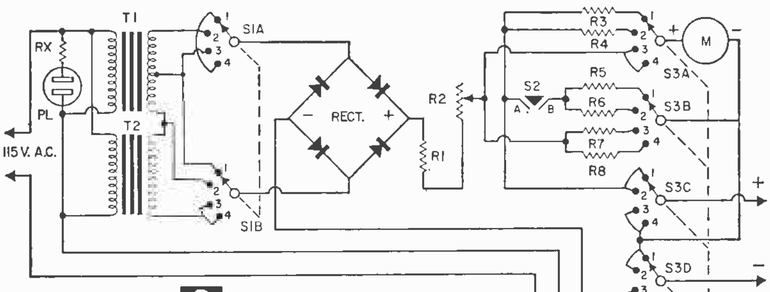


**1**

Overall view of charger. Battery clip arrangement may be varied to meet individual needs.



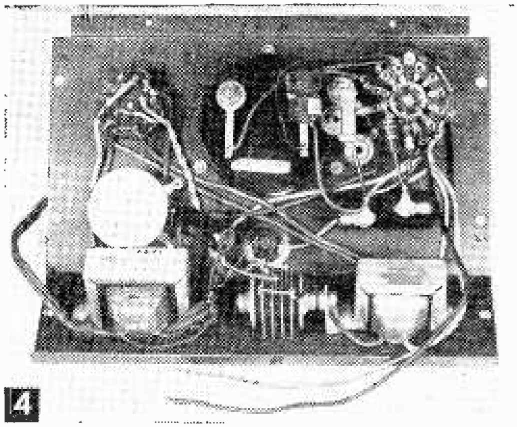

**3** PANEL LAYOUT (FRONT SIDE)




**2** SCHEMATIC

S1 ("CHARGING VOLTAGE")
- POS. 1 - LOW
- POS. 2 - MEDIUM LOW
- POS. 3 - MEDIUM HIGH
- POS. 4 - HIGH

S2 ("FUNCTION")
- POS. 1 - 1.5 VOLT } TEST
- POS. 2 - 15 VOLT } TEST
- POS. 3 - 150 MA. } CHARGE
- POS. 4 - 15 MA. } CHARGE


4

Inside view of unit. All parts are mounted on back of front panel.

**MATERIALS LIST—BATTERY CHARGER**

| Desig. | Description |
|---|---|
| Rx | 56K, 1/2 watt (required only if not included in PL) |
| R1 | 20 ohm, 1 watt |
| R2 | 200 ohm, 4 watt potentiometer (Mallory M200PK) |
| R3 | 1500 ohm 1% precision (see text) |
| R4 | 15K 1% precision (see text) |
| R5 | 10 ohm, 1/2 watt |
| R6 | 330 ohm, 1/2 watt |
| R7 | .66 ohm 1% precision (see text) |
| R8 | 7.14 ohm 1% precision (see text) |
| S1 | two-pole, 4-position rotary switch (Mallory 3226J) |
| S2 | SPST push button, normally open |
| S3 | five-pole, 4-position rotary switch (Mallory 1335L) |
| T1 | 6.3v CT 1 amp filament transformer (Merit P-2944) |
| T2 | 6.3v 1/2 amp filament transformer (Merit P-2964) |
| Rect. | bridge-connected selenium rectifier: a-c input—15 v maximum, at 200 ma (Federal 1016) |
| PL | pilot light holder for NE-51 lamp (Dialco Series 95408X and 942208 have built-in resistor Rx) |
| M | 0-1 milliammeter |
| | Steel cabinet, 6 1/2 x 7 1/4 x 9" (Bud C-1585), NE-51 lamp, 3 knobs, 2 binding posts, battery holders as desired, line cord, miscellaneous hardware |

place). Even so, the drop in voltage after charging is the greatest in the first 24 hours.

No one seems quite sure what actually happens in dry battery recharging, and some experimenters claim the best results with *ac* charging voltages, some with *dc*, and some with a combination. This unit uses unfiltered, fluctuating *dc*, which seems to give the best results in the shortest time. Filtered *dc* (secured by placing a large capacitor across rectifier output) seems to give about the same results, but requires a charging time of 12-20 hours.

Here are some results with unfiltered *dc* and an hour's charging time:

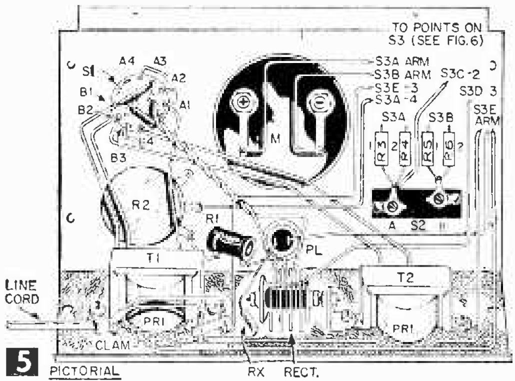
| Type Battery & Service | | Before Charge | Immediately After Charge | 2-5 Days Later* |
|---|---|---|---|---|
| Two "D" Cells (Flashlight) | No Load | 1.35 v | 1.52 v | 1.40 v |
| | Load | 1.20 v | 1.37 v | 1.35 v |
| Three "D" Cells (Strobelight) | No Load | 1.33 v | 1.40 v | 1.35 v |
| | Load | 1.15 v | 1.33 v | 1.30 v |
| Two "C" Cells (Flashlight) | No Load | 1.35 v | 1.60 v | 1.45 v |
| | Load | 1.15 v | 1.50 v | 1.35 v |
| 9 v Transistor# (Radio) | No Load | 7.5 v | 8.7 v | 8.0 v |
| | Load | 2.0 v | 7.2 v | 6.0 v |

* shelf life time; not in service
\# charged at 9 ma; all others charged at 100 ma

We see that particularly in the case of the transistor battery, recharging is not too effective when the battery nears exhaustion. The charging rate must be fairly low, with a range of 5-30 *ma* recommended for batteries made up of penlight cells, and a range of 50-200 *ma* for the larger cells, such as "C", "D", and "A" cells.

Schematic Fig. 2 shows that switch $S_3$ controls the function of the unit. On Positions 1 and 2, used for testing, proper meter multipliers are switched into the circuit for reading the battery voltages, and load resistors are cut in by pressing switch $S_2$. When switch $S_3$ is on Positions 3 and 4, *ac* power is on, and the *dc* output is fed through the meter (with proper current shunts) to the battery, with terminal polarity reversed. The proper charging voltage and current is selected by switch $S_1$ and rheostat $R_2$. Two filament transformers, with their secondaries wired in series through $S_1$, provide *ac* input voltages to the rectifier of 3.15, 6.3, 9.45, and 12.6, which are sufficient for all batteries up to 9 volts. Resistor $R_1$ is a limiting resistor to prevent the current from reaching excessive levels.

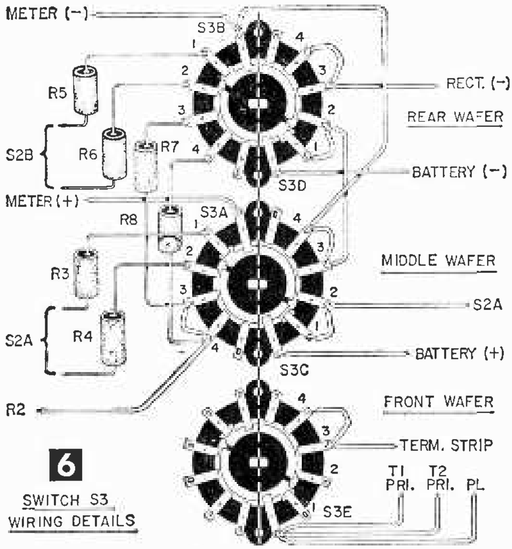
All parts (except battery holders and terminals) are mounted on the front panel of a small sloping-front cabinet, as shown in



5

Figs. 4 and 5. The layout for the panel is shown in Fig. 3, except for the meter mounting screw holes, which should be drilled to fit the meter being used.

The values shown for resistors $R_3$, $R_4$, $R_7$ and $R_8$ are applicable only to a 0-1 *ma* meter with an internal resistance of 100 ohms. This is a standard 1000 ohms/volt movement, but values for other meter movements can be calculated with the formulas at top of the next page for the ranges shown on Fig. 2:




**6** SWITCH S3 WIRING DETAILS

$$R3 = \frac{15 - (Im \times Rm)}{Im} \qquad R4 = \frac{15}{Im}$$

$$R7 = \frac{Im \times Rm}{.014} \qquad R8 = \frac{Im \times Rm}{.150}$$

Im is the full scale deflection of meter in amperes, Rm is the internal resistance of meter in ohms.

Wire the primaries of the transformers and pilot light first. Then check polarity of the secondary leads of the transformers so that series wiring will give 12.6 *v*. If the polarity is incorrect, the two secondaries will buck each other, and give no output voltage when wired in series. Complete the wiring.

The selection of the number and types of battery holders mounted on the cabinet will depend on individual needs. Two binding posts, wired in parallel with the battery holders, are also provided. Several sets of leads, using the most often needed battery plugs can then be used with the binding posts for those batteries that do not fit in the holders.

To use the unit, plug it in, turn $S_1$ to "Low", $R_2$ to full counterclockwise position, and $S_3$ to "15V Test." Put the batteries in the proper holder (or attach to leads), and switch $S_3$ to the appropriate scale and read the no-load voltage. Then press $S_2$ to read the voltage under load. Resistor $R_5$ provides a 150 *ma* load with 1.5 *v*, and $R_6$ provides a load of about 14 *ma* at 4.5 *v*, 18 *ma* at 6 *v*, and 27 *ma* at 9 *v*. Next, switch $S_3$ to the desired charging current range, and set the charging rate by adjusting $S_1$ and $R_3$.

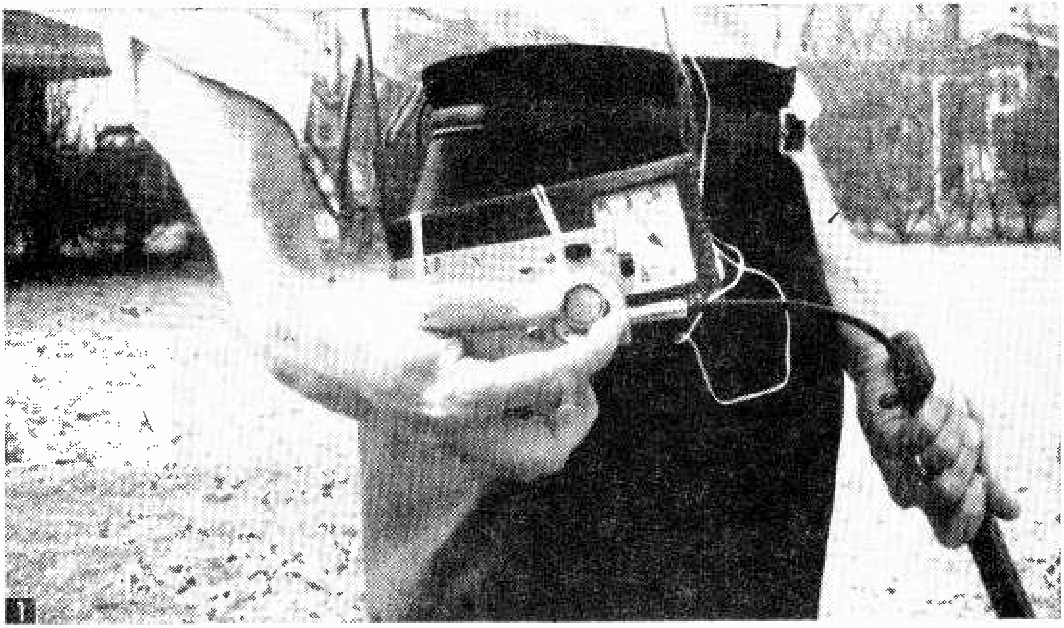
Generally, charging for an hour or two at the rates mentioned above will be effective. The rate may be increased, but under no conditions should the battery be permitted to get warm. Longer charging times can be used, with varying effectiveness, depending on the charging rate and battery condition, but the unit should be watched. Sometimes excessive charging, either in current rate or time, seems to break the cell down, and the current rises, increasing the damage.

---

# Piggy-Back Metal Locator

**A one-transistor project for finding loose gold and other buried treasures**

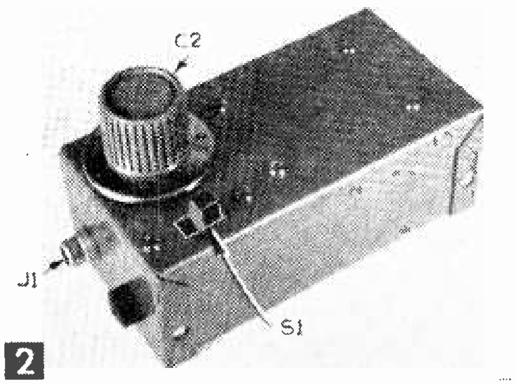
**By JOE A. ROLF, K5JOK**




A simple generator and probe combine with a portable transistor radio to make this locator.

EVEN the novice builder should be able to complete this simple transistorized metal locator in a few hours, yet it is sensitive enough to detect metal objects buried under 6 in. of earth—coupled with any inexpensive transistorized portable radio. The cost of the entire project will be less than $8.

Basically, all metal locators consist of three elements: an RF generator with a sensing probe, a reference oscillator, and a detector-amplifier system. In operation, the frequency of the generator is changed when the probe is brought near a metal object and moves away from the frequency of the reference oscillator. This change in frequency between the two signal sources is detected and indicated by the detection-amplifier portion of the circuit.

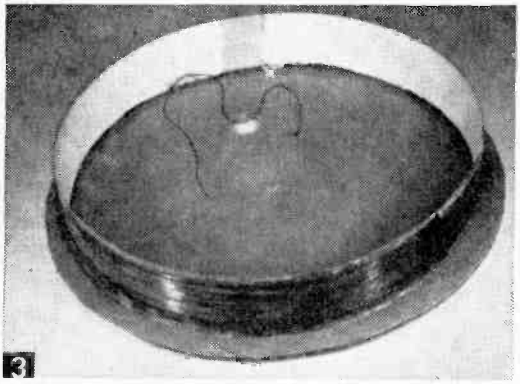



The entire generator fits into a handy Bud Minibox.

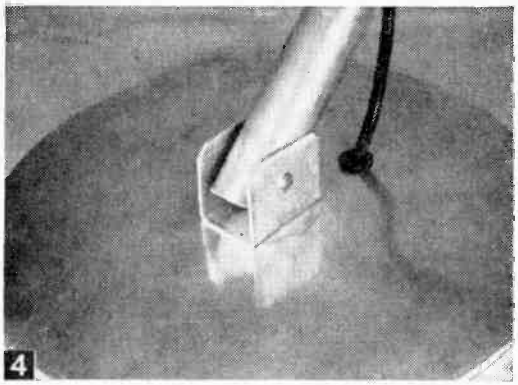
From this explanation, it can be seen that even a simple metal locator stands a good chance of becoming an awesome piece of circuitry—that is, until you stop and realize that a transistorized radio already contains most of what you need. If a local radio station is used as the reference oscillator, and the receiver as the detector-amplifier section, the generator and probe is all that you need in order to build a fairly good metal locator.

**Construct the Probe Assembly First.** This portion, which consists of L2 and a connecting cable, will determine the overall sensitivity of the completed unit. In fact, you may want to experiment by designing your own probe.

Wrap a layer of wax paper around a 7-in. cylinder and tape in place at the edges. Next, cut a strip of heavy cardboard, or poster pa-



Wind the sensing coil of the probe on a cardboard form and place it in a 9-in. cake pan.



Make a bracket for the handle and attach it to the cake pan.

per into a 1¼-in. strip and tape over the wax paper to make a 7-in. dia. coil form for L2. When secured, close-wind 40 turns of #26 enameled wire on the form, starting about ¼ in. from one edge. As turns are added, secure them with small pieces of tape. Tape the beginning and end leads in place, leaving them about 6 in. long, and give the completed coil several coats of Q-dope. When the coil has dried sufficiently, the wax paper will allow the form to be slipped off the cylinder easily. Glue the completed coil to a 7¾-in. cardboard disk as shown in Fig. 3.

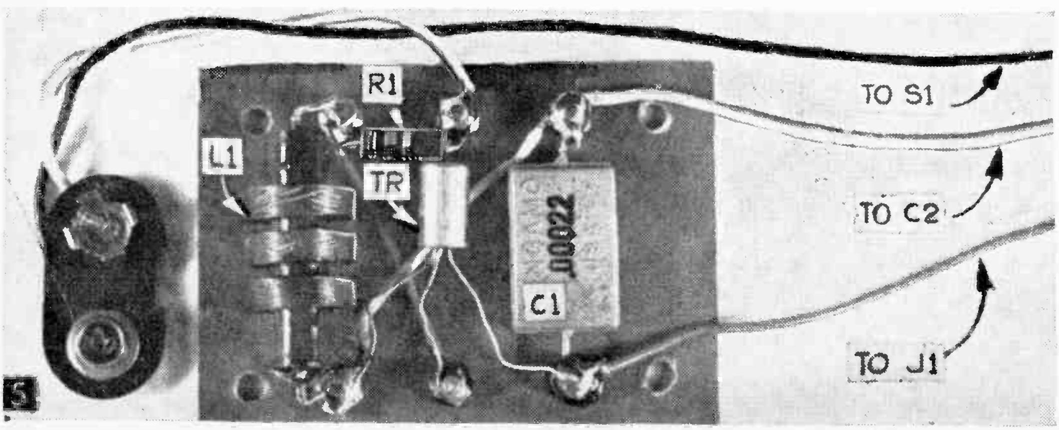
Mount the disk inside a 9-in. aluminum cake pan, and secure it by means of the washer and screw which mount the handle bracket shown in Fig. 4. Next, attach a 4-ft. broom or other handle to the probe.

**The Cable,** which connects the probe to the RF generator, is a 3½-ft. piece of RG-59/U 72-ohm coax. It connects to the leads of L2 at one end, and plugs into the generator at the other by means of a phono plug. This cable forms part of the capacity of the probe and should not be longer than 4 ft. at the maximum. Tape the cable to the handle of the probe to prevent it from becoming tangled in operation.

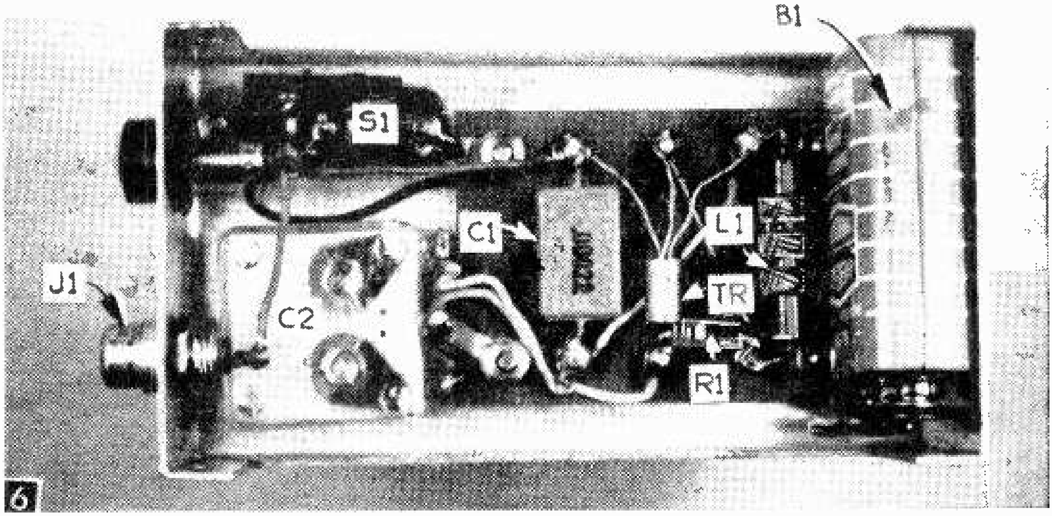
**Construct the Generator** with the help of Figs. 5 and 6. Mount the transistor, L1, R1, and C2 on a Bakelite terminal board as shown in Fig. 5. Then bolt the board to the bottom of the box. The terminals are 2—56 x ¼-in. screws secured to the board.

Mount the tuning capacitor C2 and the on-off switch S1 side by side, and J1 to the end plate of the box. Note particularly the pin jack next to J1. This jack can be omitted, but was included as a possible means of coupling to the receiver when needed. It is not necessary to make a direct circuit connection to this jack, as sufficient coupling will be obtained by placing the lead from J1 nearby. The battery B1 fits snugly at the opposite end of the Minibox.

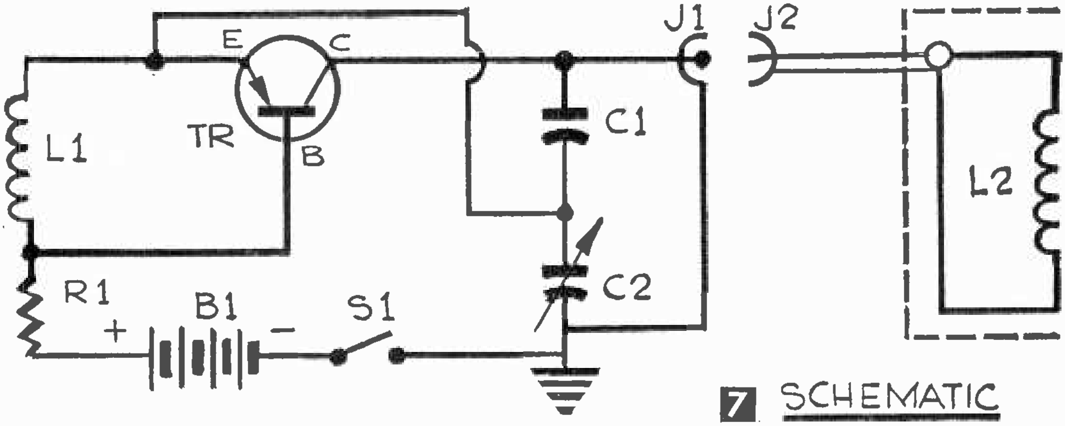
**Testing the Unit.** When wiring is completed, plug the probe into J1 and turn the unit on. The circuit can be checked by tuning the transistor radio to a moderately strong station at the low end of the broadcast band and rotating C1 slowly back and forth. A whistle will be heard when the oscillator is tuned across the station, indicating that the unit is functioning properly.



Mount the parts on the Bakelite board before putting it into the cabinet.




Internal view showing components and wiring.




7 SCHEMATIC

MATERIALS LIST—METAL LOCATOR

| Desig. | Description |
|---|---|
| B1 | 9-v. transistor battery (Eveready #216) or equivalent |
| C1 | 220-mmf mica or ceramic capacitor |
| C2 | 365-mmf variable capacitor, miniature transistor type (Argonne) or equivalent |
| J1 | female phono chassis jack (Switchcraft 3501-FP) or equivalent |
| J2 | male phono plug (Switchcraft 3502) or equivalent |
| L1 | 1-mh RF choke (National R-50 1 mh) or equivalent |
| L2 | 40 turns #26 enamel wire closewound on 7-in. form as described in text |
| R1 | 1000 ohm, 1/2 watt carbon resistor |
| S1 | SPST slide switch |
| TR | 2N412 RCA transistor, or equivalent |
| 4-5 ft. | RG-59/U coaxial cable |
| 1 | phone tip jack |
| 1 | CU-2116 Bud Minibox, or equivalent |
| 1 | bakelite board, 1/8 x 1 5/8 x 2 1/4 in. |
| Misc. | 2/56 x 1/4-in. screws, scrap aluminum, knob, 9-in. cake pan, small battery clip with leads |

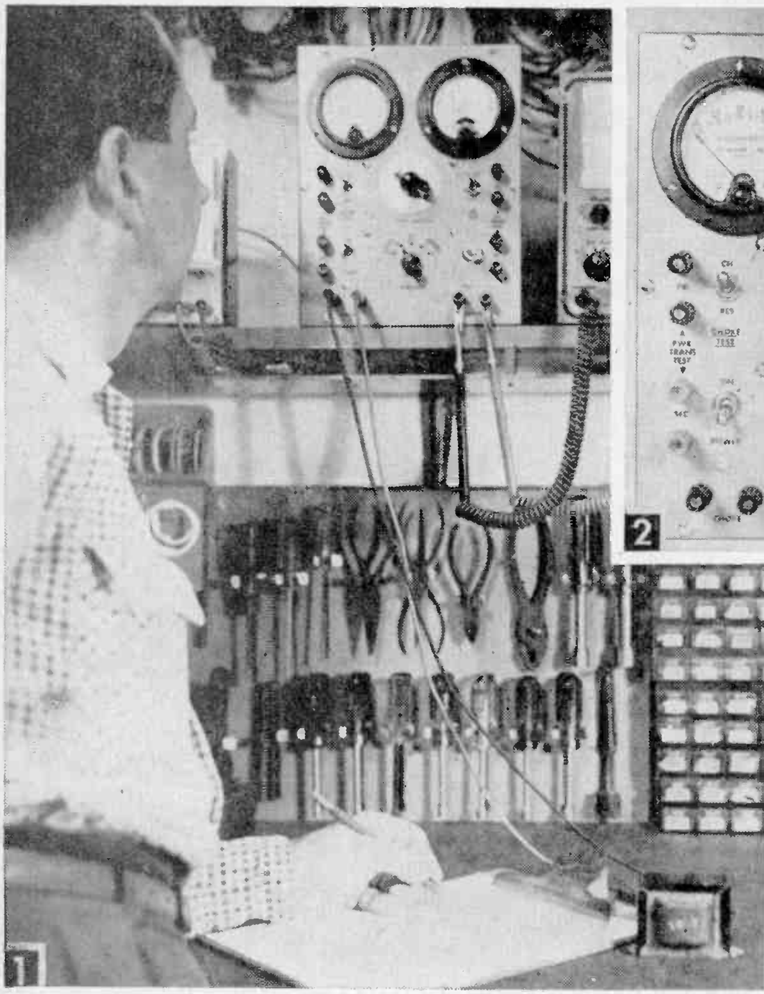
The generator can be attached piggy-back to the transistorized receiver by means of two heavy rubber-bands. Tune the receiver to a station at the low end of the broadcast band, as when testing, and rotate C1 back and forth until the generator signal is zeroed with the station's frequency. This will be evident when the whistle disappears, but reappears when C1 is moved either way.

Next, slowly move the probe back and forth over a fairly large metal object. You will note that the whistle will reappear as the probe approaches the metal. A little practice in tuning the oscillator and moving the probe will be necessary for the best results. In some cases, sensitivity will be improved if the antenna jack of the receiver is connected to the pin jack with a short piece of insulated wire.

The depth at which objects can be detected with this locator is determined by the type of earth and the size of the object. Large metal objects can be detected at greater depths than smaller objects. Greater depths will be possible in dry sandy earth than in heavy moist earth. With practice, however, it is actually possible to get an idea of how deep and how large the object is that you've located—a good thing to know in case you care to dig it up!

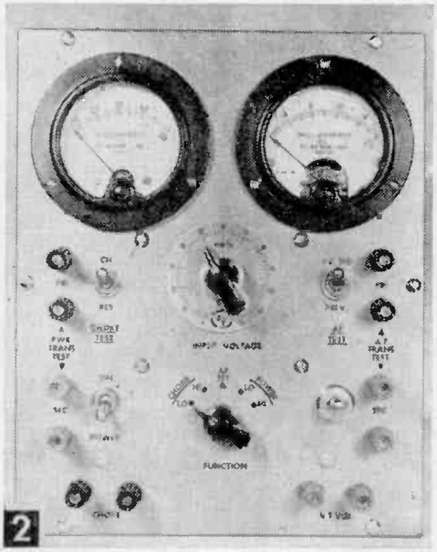
# Iron-Core Choke and Transformer Meter

**Home-built unit will measure inductance, saturation currents, and impedance ratios accurately**



1

Testing a filter choke by recording the voltage at various currents and plotting an inductance curve.



2

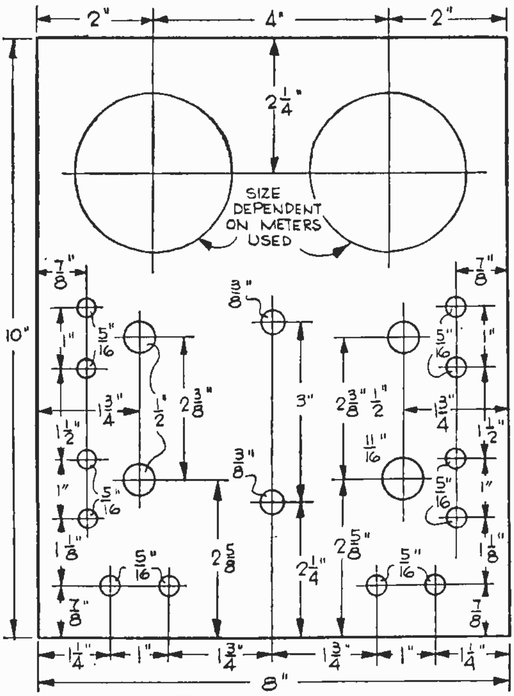
Front view of unit which, with VTVM, will make various iron core component measurements.

**By W. F. GEPHART**

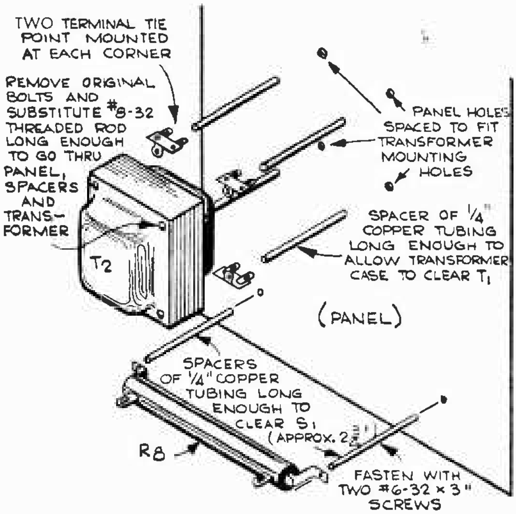
IRON core chokes and transformers, used in practically all types of electronic equipment, present some real problems to the designer and serviceman, which can be solved by the meter in Fig. 2. When current is flowing through a choke or a transformer, inductance and impedance are somewhat difficult to measure. Furthermore, manufacturing tolerances are broad in most cases, and actual values are often appreciably different than labeled values.

In power supply filter design, it is important to know the inductance of filter chokes at the current to be drawn, and also to know the exact inductance of chokes and reactors when designing low frequency resonant circuits. One circuit in the unit will permit the measurement of inductance at various currents.

Another problem frequently encountered is the measurement of AF transformer impedances. The primary impedance depends on the load impedance across the secondary; and printed ratings, when available, usually refer to a specific primary or secondary impedance. Junk box or unlabeled transformers can be




3 PANEL LAYOUT




4 T2 AND R8 MOUNTING DETAIL

used for various purposes if their impedance ratio can be determined. A second circuit in the unit permits this measurement.

The unit also provides a circuit for testing power transformers and other transformers that might be used as power transformers. In transistor circuits for instance, small audio or surplus transformers are often used as power transformers.

Although the transformer meter is designed to be used with an external VTVM, an internal VTVM can be wired-in easily enough. The unit in Fig. 2 includes internal milliammeters, but can be built to use external ones. The extra functions are by-products of the components required for the inductance-measuring circuit, and require few additional parts.

**Construction.** The most expensive part of the unit is the variable autotransformer, which is used for all its functions. Most of the remaining parts can be found in a junk box. Meters used in this model are surplus, but low-cost moving vane meters can be used, since a high degree of meter accuracy is not required.

Build the unit according to the panel layouts (Figs. 3 and 4), the schematic (Fig. 5), and the pictorial wiring diagrams (Figs. 6, 7, and 8). The power transformer mounts on studs behind the panel. This eliminates the need for a chassis and related wire holes and grommets. All other parts are panel-mounted or connected between tie points.

NOTE: In making tests, the unit being tested should be isolated from other equipment, since the voltage on the power transformer binding posts is connected directly to the ac line.

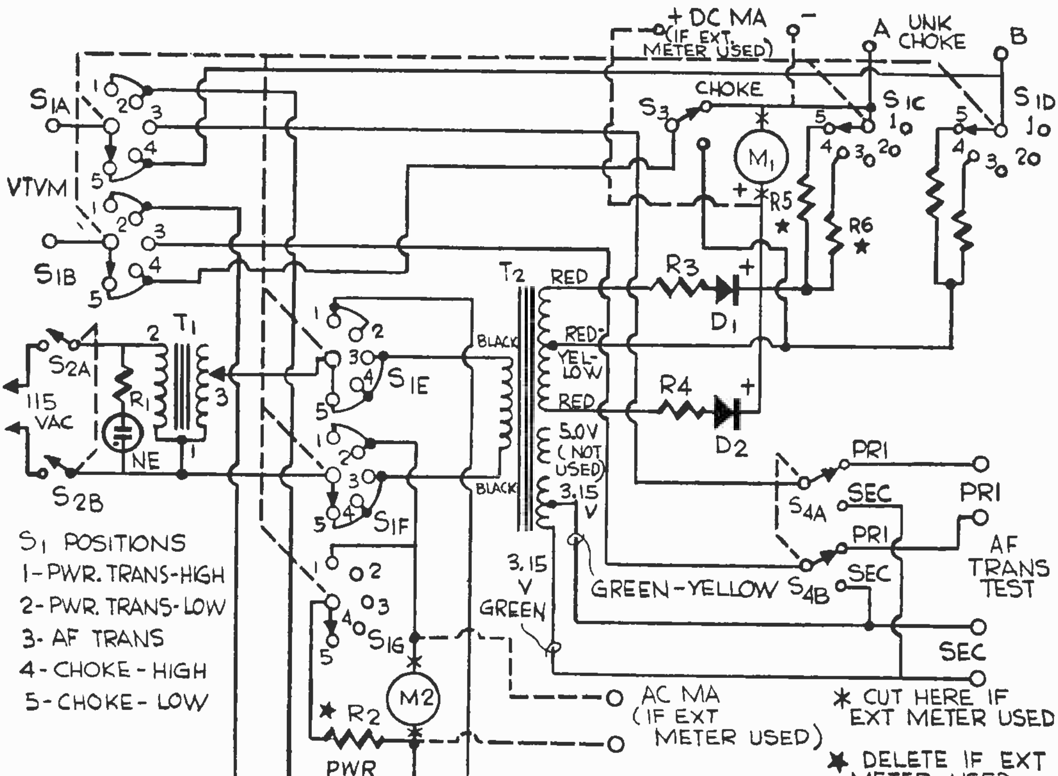
**Inductance-Measuring.** The simplified inductance-measuring circuit, with the actual circuit as related to the unit (Fig. 9), consists of a variable, unfiltered dc voltage source, a milliammeter, and a load resistor. The choke being measured is connected across the voltage output in series with the resistor and milliammeter. The exact voltage available is unimportant; any amount sufficient to cause readable current to flow through the resistance of the choke and resistor will do. Any power transformer furnishing around 250-350 volts dc at the maximum current to be tested will work.

To make the test, measure the ac voltages across the choke and across the resistor with an ac VTVM. (This voltage is the ac component of the fluctuating, unfiltered dc from the power supply.) The inductance of the choke at the particular dc current indicated can then be calculated by the following **formula:**

$$L = \frac{E_L \times R}{E_R \times 2\pi - f}$$

$E_L$—voltage across choke
$E_R$—voltage across resistance
R—resistor ohms
f—120 cycles
$\pi$—3.1416

The accuracy of this formula requires that the resistor have a resistance 3-6 times the dc resistance of the choke. It must also be large enough in ohms to provide easily-readable voltage drops, and large enough in wattage to carry the maximum current to be used in the test. For these reasons, two resistors were provided, as shown in Figs. 5 and 9.




**5 SCHEMATIC**

The high current range (up to 200 *ma*) uses a 1000-ohm resistor, and is primarily used for filter chokes where the dc resistance is usually 350 ohms or less. The low current range (up to 20 *ma*) has a 30,000-ohm resistor, for use with audio reactors, whose resistance may go as high as 1000 ohms. While this ratio is in excess of that mentioned above, the high value is needed to get readable voltage readings at low currents.

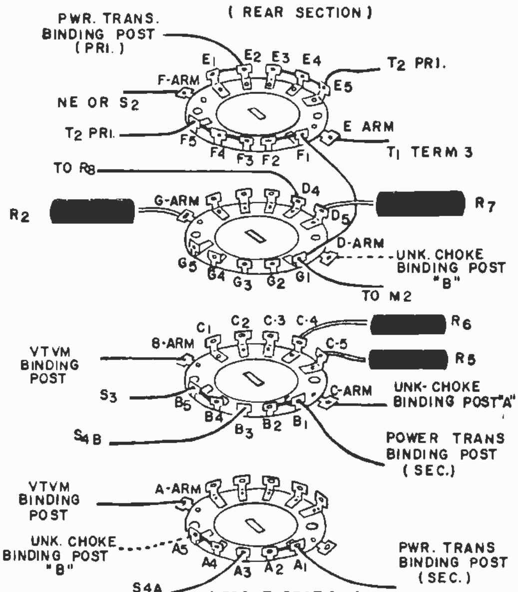
With these two ranges, meter M1 and related shunts, R5 and R6, were chosen to give full scale readings at 20 and 200 *ma*. Other ranges (0-15 and 0-150 *ma*, 0-25 and 0-250 *ma*, etc.) may be used if other meters or shunts are available.

Since the resistance values are fixed, and the value of $2\pi f$ (for 120 cycles) is 753.98, the formula can be simplified to:

$$L = \frac{E_L}{E_R} \times K \qquad K = \frac{\text{Resistance of R}}{753.98}$$

To determine the value for K for each range, use the actual measured value of the resistor instead of the marked value. Final results will depend on:

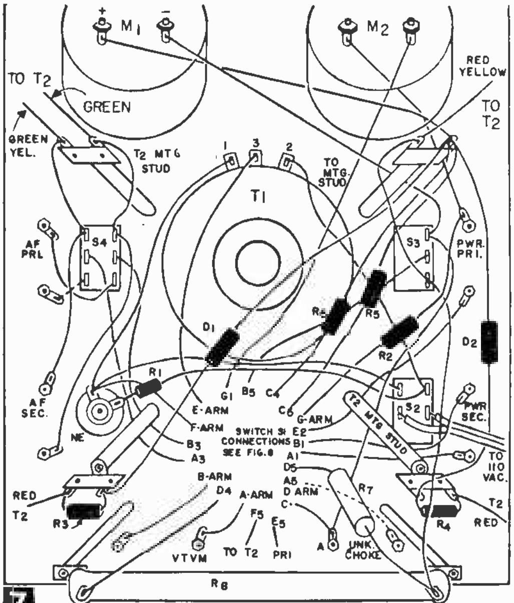
1. The accuracy of the resistance measurement used in determining K.
2. The linearity of the VTVM used, particularly when switching from one range to another.



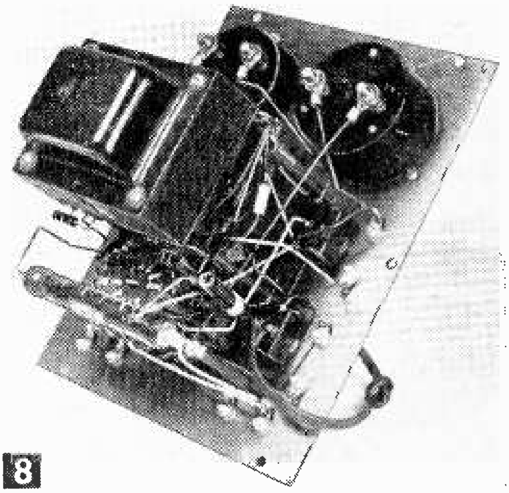

**6 SWITCH 1 WIRING DETAIL**

3. The accuracy of the readings taken and the calculations made.

The results of these tests may be substan-



7 WIRING (T2 OMITTED FOR CLARITY)


8 Back-of-panel view showing chassis-less construction.

tially different than the values marked on chokes. Figure 12 shows the results of a test on a standard production run filter choke, showing the measured inductance (at rated current) about 10% under the rated value. However, in view of manufacturing tolerances, stated by one company to be "from −15% to +50%," these results seem to be in line, and are probably more accurate than marked value.

**Impedance-Measuring.** The simplified impedance-measuring circuit and actual circuit, is shown in Fig. 11. Connect 1 volt ac across the secondary, which is set by T1, and read on the VTVM when S4 is on "Sec" ("1v STD" on panel). Throw the switch to "Pri" and read the voltage across the primary. The square of this voltage reading is the impedance ratio of the transformer, and the impedance required across one winding to match a certain impedance in the other winding may be determined by the following formula.

$$Z_p = (V)^2 \times Z_s \text{ or } Z_s = \frac{Z_p}{(V)^2}$$

$Z_p$—primary impedance
$Z_s$—secondary impedance
V —voltage reading across primary with 1.0 volt ac across secondary

For example, with 1 volt across the secondary of an unmarked output transformer, suppose you get a reading of 38 volts across the primary. This squared equals 1444. If this transformer uses a 3.5-ohm speaker, use the formula for $Z_p$ above, and multiply 1444 times 3.5. This equals 5054, which would indicate a proper primary impedance around 5000 ohms. Readings made this way may not equal marked values, since manufacturing tolerances, except for some hi-fidelity transformers, are high.

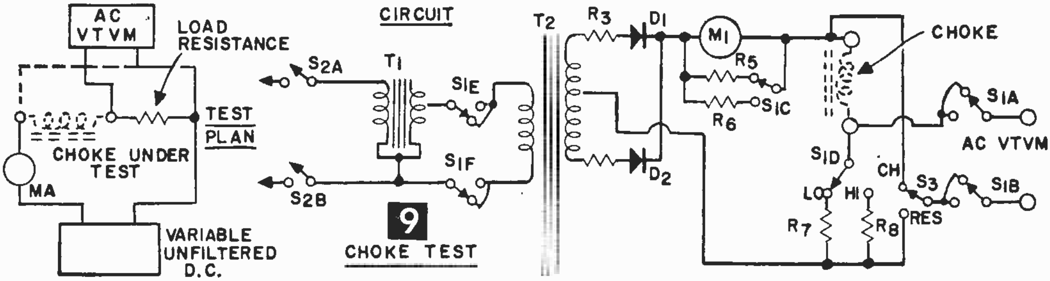
**Variable AC Voltages.** The third circuit in the unit is shown in simplified form in Fig. 10. This merely supplies a metered, variable ac voltage for transformer checks, which can be used in several ways.

Often audio transformers can be used as power transformers for low current transistorized devices. For example, take an output transformer with a 5000-ohm, 50-*ma* primary and several secondary taps, such as 4, 8, 16, and 500 ohms. By rather involved calculations, the standing primary current could be determined if connected across the ac line, and the output voltage from the secondary taps.

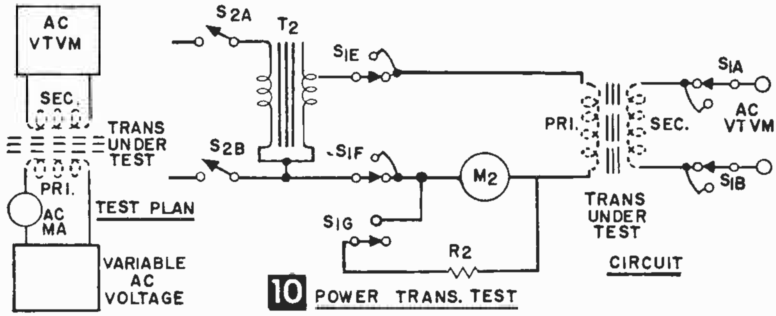
It is much easier, however, to connect the primary to the ac line through the variable transformer, connect the VTVM to the secondary, and read the output voltage. As the input voltage is increased toward the line voltage, you can also read the no-load primary current to make sure that it does not exceed rated value.

In this test, the scale on the autotransformer dial shows the approximate input voltage as it is increased. In hybrid equipment, you can sometimes secure transistor power voltages by connecting an audio transformer to filament windings of the regular power transformer in order to get odd ac voltages.

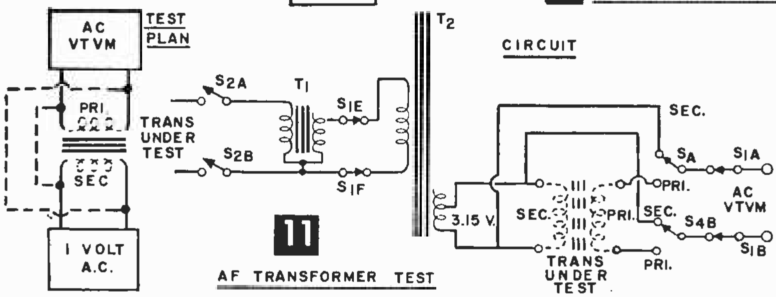
The surplus market includes many 400-cycle transformers that overheat if used at rated voltage on 60-cycle current. However, they may be used at lower voltages when the iron core does not become saturated. To determine the permissible input voltages for these units, connect one winding to the variable input voltage terminals, and gradually increase the voltage, watching the current



9 CHOKE TEST



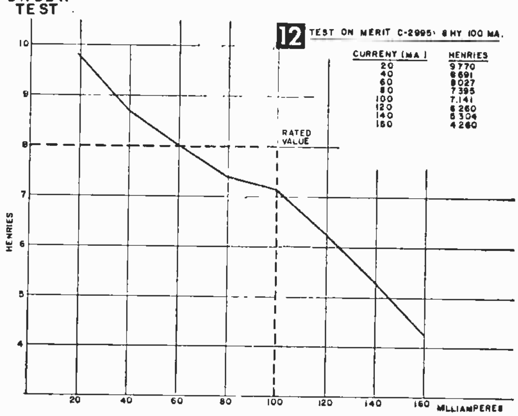
10 POWER TRANS. TEST



11 AF TRANSFORMER TEST

MATERIALS LIST—CHOKE METER

| Desig. | Description |
|---|---|
| D1, D2 | 1N2484 diodes (or Sarkes-Tarzian F-6) |
| M1 | dc milliammeter (see text) |
| M2 | 0-20 ac milliammeter (see text) |
| PL | NE-51 lamp |
| R1 | 56K, ½-watt carbon resistor (if not included in PL holder) |
| R2 | see text |
| R3, R4 | 27-ohm, 1-watt carbon resistors |
| R5, R6 | see text |
| R7 | 30K, 5-watt wire wound resistor |
| R8 | 1000-ohm, 50-watt wire wound resistor |
| S1 | 8 pole, 5 position rotary switch (Mallory 1345L) |
| S2 | DPST toggle switch |
| S3 | SPDT toggle switch |
| S4 | DPDT toggle switch |
| T1 | variable autotransformer 0-135 volts, 1.5 amps (Ohmite VT-2) |
| T2 | power transformer (see text) |
| Misc. | 12 binding posts, 2 knobs, 7 x 8 x 10-in. cabinet (Bud CU-880), tie points, hardware |



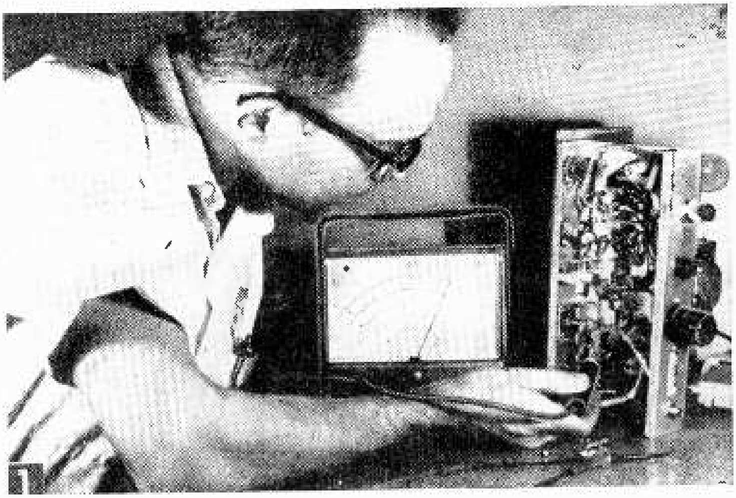
12

being drawn. When the current levels off and stops increasing (as the voltage is increased) the core is saturated, and the maximum 60-cycle voltage is being applied.

In this test (and in the choke test), where current ratings are unknown, watch for heating of the unit being checked. Generally speaking, an iron-core unit can be operated at any current that does not cause excessive heating. If the windings, after five minutes' operation, are only warm (as opposed to hot) to the touch, the current is probably within operating range. In cased units, remove the cover, and feel the actual windings for this "touch" test.

A dual-range ac milliammeter is best for this latter test, and the unit shown uses a 0-50 ac milliammeter M2 with a shunt R2 to give a 0-100 *ma* scale. If both low (0-20 *ma*) and high (0-100 *ma*) currents are to be read, two ranges are desirable because of the nonlinearity of ac scales, and the crowding at the lower end.

# Get a Third More from Your Meter for $1.50



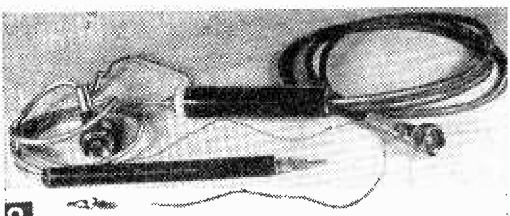
Experimenter's most commonly used checking instrument, the vacuum-tube voltmeter, is even more useful when used with an RF crystal probe.

By JOE A. ROLF, K5JOK

FEW experimenters would be without a VOM or VTVM for long, yet how many ever use these instruments to full advantage? The accessory probe in Fig. 2 costing as little as $1.50 will add a third range to your meter and enable it to do some rather amazing things.

This time-proven RF crystal probe can be easily constructed or purchased at your local supply house. Here is a brief description of its circuit, as well as information on how to build your own probe:

The two most widely used circuits are shown in Fig. 3. In Fig 3A, the .01 *mfd* capacitor is a dc isolating capacitor that permits only ac to appear across the IN34 diode which rectifies the signal so that only positive peaks are present at the resistor. The 5-meg-ohm resistor in series with the 10-megohm internal resistance of the VTVM forms a voltage divider and .707 of the peak voltage (RMS value) appears across the VTVM input. Distributed capacity of the cable and filtering action of the resistor provide pulse smoothing and the RMS voltage from the probe can be read on the VTVM dc scales.



2

Two crystal probes constructed by the author. They will measure impedance, resonance, and stage gain, as well as troubleshoot receivers and transmitters.

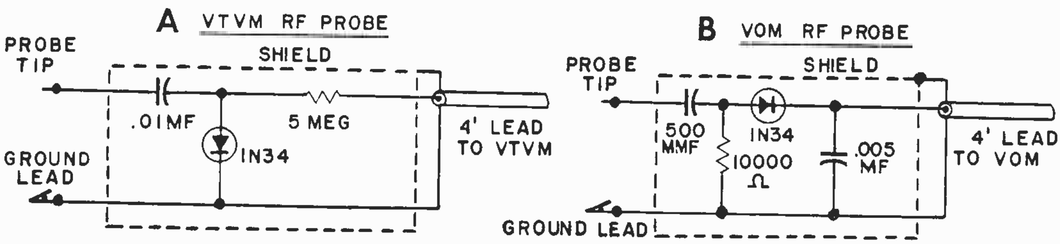
This circuit, designed for use with a VTVM, is the most practical and useful of the two shown. RF voltages of up to 20 volts at frequencies up to 200 *mc* can be measured with 10% accuracy. This probe features low input capacity (3.5 *mmfd*), plus high ac input resistance. Input resistances will range from .25 megohm at 500 *kc* to about 25,000 ohms at 100 mc. This means that when used in RF circuits, there is a minimum of loading or detuning.

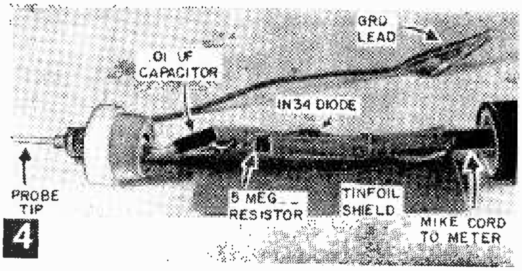
The circuit in Fig. 3B is used with VOMs of 5,000 to 20,000 ohms-per-volt sensitivity. As in the preceding description, the 500 *mmfd* capacitor is for dc blocking, but the 1N34 diode in this probe allows positive peaks to charge the .005 *mfd* capacitor, which in turn discharges through the VOM to give a current reading.

The circuit has two serious disadvantages. It must be calibrated to read voltage and its input resistance is quite low as compared to the VTVM probe. It is still a very handy VOM probe, however, since it will indicate the presence of an irregular voltage of almost any waveshape and will show changes in the amplitude of such a voltage.

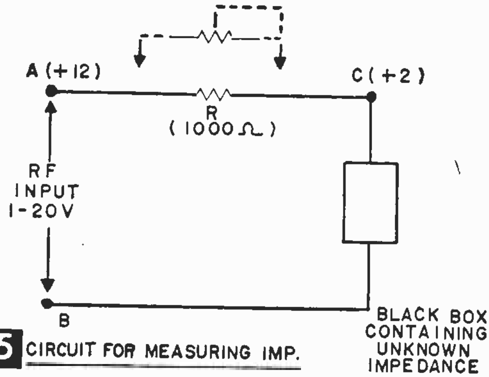
**Housing for the Probes.** Each unit in Fig. 2 was built for less than $1.50 each. One was constructed and slipped inside a piece of ½-in. ID bakelite tubing; the other, using the circuit in Fig. 3A, was housed in an empty plastic "Bioket" throat lozenge bottle. Interior of this probe is shown in Fig. 4. Either circuit can be housed in a metal container to

**3** MOST POPULAR CIRCUITS




**4** Home-built probe as it appears with housing removed.




**5** CIRCUIT FOR MEASURING IMP.

simplify shielding, but there is increased danger of shorting the components when used in tight places.

The main construction considerations are insulation of components from one another and shielding. With the smaller probe, the author slipped a large piece of insulated tubing over the probe components, then inserted everything into a length of shielding from RG/8U coax. Components of the larger probe were insulated and wrapped in a piece of tinfoil as in Fig. 4. With careful construction, a home-built probe will be as effective as the commercial version at a fraction of the cost.

Now let us examine a few applications in which the RF crystal probe can be used. In the following examples, the procedures outlined are for use with a VTVM and probe, or with the VTVM ac probe at audio frequencies. Where a relative reading is required, or where small ratios or differences in percentage are involved, a VOM with probe can be used with fair accuracy. Remember, however, that the low input resistance of the VOM will result in circuit loading which must be taken into account.

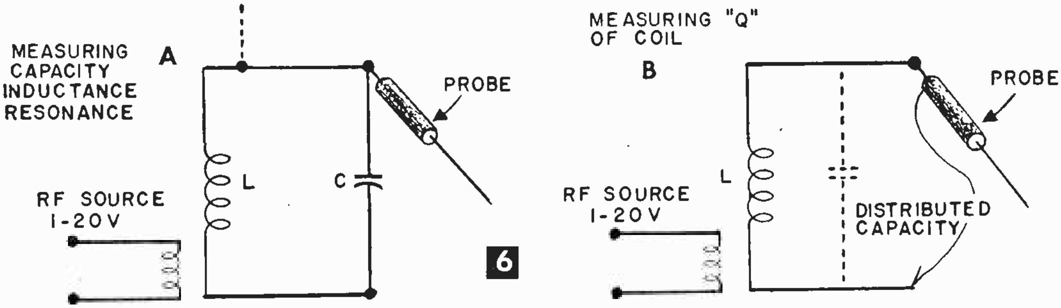
**Measuring Impedance.** Figure 5 shows a simple, but very useful method of measuring impedance. The impedance to be determined is shown as a "black box," since it can be any type of circuit having impedance . . . an antenna, transformer, choke, or even the input of an amplifier. A resistor, usually 1K, 10K, or 100K, is connected in series with the unknown impedance across an ac source capable of delivering 1-20 volts.

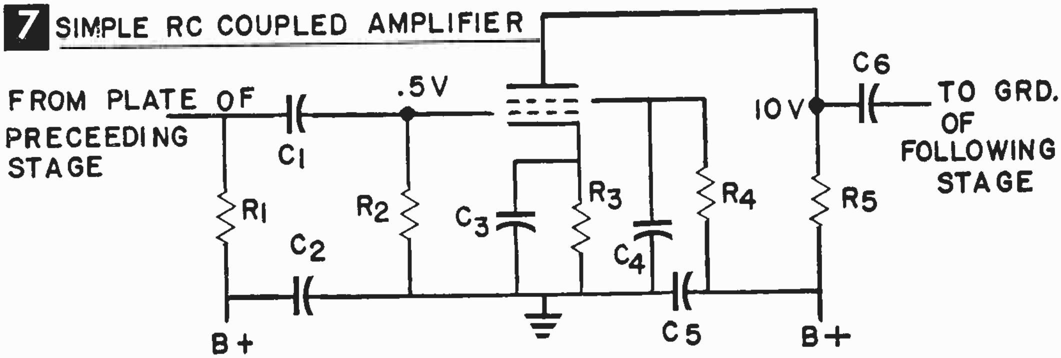
Assume that the ac input is a 1 *mc* signal and that voltage measured between points A and B with the probe is 12 volts. Next measure the voltage between points C and B. It will be 2 volts. These readings indicate a 2-volt drop across the unknown impedance, and 10-volt drop across the 1000-ohm series resistor. Voltage drop across the resistor is five times the voltage drop across the unknown impedance. Therefore, the unknown impedance must be one-fifth the resistance of the 1,000-ohm resistor, or 200 ohms, at 1 *mc*. To vary this circuit, you can insert a variable resistor in place of R and adjust it for an equal voltage drop with the "black box." The resistance of R is then equal to the impedance of the box.

**Resonance, Capacity, Inductance.** By measuring the voltage across a tuned circuit, you can determine the resonant frequency of the circuit, since voltage is greatest at resonance. In Fig. 6A a variable RF source with from 1-20 volts output is coupled to the circuit by a small link. When the generator is tuned to the resonant frequency of the circuit, there will be a large increase in voltage.

Assume, though, you have a tuned circuit which is resonant somewhere near 50 *mc*, but an RF generator that will tune only to 30 *mc*. The resonant frequency of the circuit can still be determined by tuning the generator from 20 to 30 *mc*. The generator's second harmonic (40 to 60 *mc*) will give sufficient indication when resonance is reached.

With the above method, it follows that unknown capacity and inductance can also be determined. If a 10-*mmfd* capacitor and an unknown inductance resonate at 50 *mc*, it is




a simple matter to calculate the unknown inductance, or vice versa.

A modification of this particular circuit is the field strength meter. If the tuned circuit is shielded and a short antenna is attached at point A, the circuit plus the probe and meter compromise a simple but effective field strength meter for antenna measurements and transmitter adjustment.

**Determining "Q".** An RF probe and RF generator can be used as in Fig. 6B to determine the "Q" of a coil or tuned circuit. This method is not as accurate as could be desired, but is quick and easy, and will give a good approximation. Couple a 1- to 20-volt RF source to the coil under test, with the probe measuring voltage across the inductance. Tune the generator until maximum voltage reading indicates the resonant frequency of the inductance with distributed capacity. Then tune the generator down in frequency until the voltage drops to 71% of its maximum value.

Note the difference in frequency and tune the generator above the resonant point until the voltage again is 71% of the maximum value. Add this frequency difference to the one previously noted and divide the sum into the resonant frequency. The resulting quotient is the "Q" of the coil.

**Measuring Amplifier Gain.** The actual gain of an amplifier, a valuable piece of information for design and service work, can be determined with an RF crystal probe. Figure 7 shows a simple RC coupled amplifier. Suppose that the probe shows .5 volt RF present across the grid input resistor R2, and 10 volts RF across the load resistor R5. Output of this particular amplifier is 20 times the input, meaning that the stage has a voltage gain of 20.

In service work, this figure can be compared with the manufacturer's service information to determine how well the amplifier is functioning. In design, this figure can be used for comparison with other circuits, or to determine overall gain of several stages.

**Troubleshooting.** Condition of the bypass capacitors in Fig. 7 can be checked by measuring the RF voltage across them with the RF probe. If you place the probe across C3, and find that RF is present between R3 and ground, there is evidence that C3 is either open or too small, since the purpose of this capacitor is to bypass all RF to ground. You can similarly check C1, C2, C4, C5, and C6.

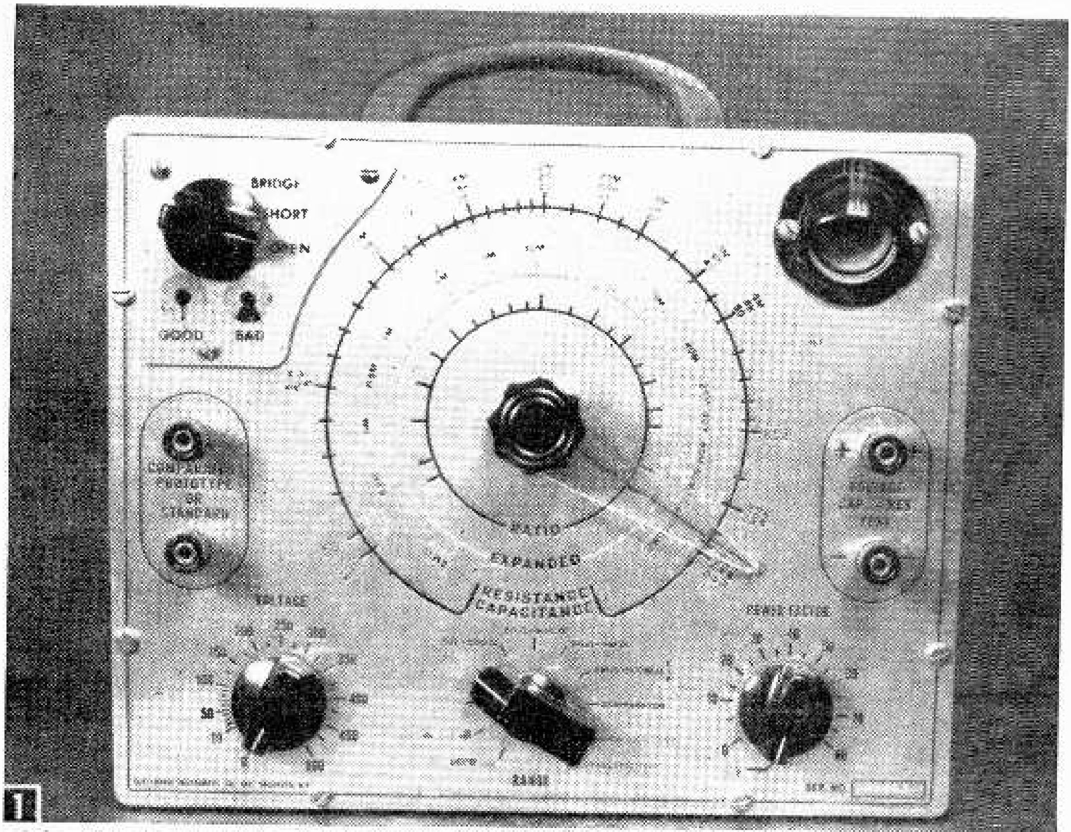
Measurement of RF voltages in receiver converter stages, or in the oscillator-driver stages of transmitters, can be helpful both in troubleshooting and tuning. To determine if an oscillator is functioning, connect the ground lead of the probe to the chassis and bring the tip near the oscillator circuit. The probe will detect any RF present, and the stage can be tuned for maximum performance without circuit detuning.

Only the most common applications of the RF crystal probe have been covered. In any case, you can see that addition of such a probe to your meter is a good investment in that it extends the meter's usefulness far beyond its normal range.

# In-the-Circuit Testing for RC Bridges

## A simple modification to increase the versatility of your condenser checker

By W. F. GEPHART




Only visible change on a modified Eico 950 RC checker is the small aluminum plate and switch at upper left on panel.

MANY shops and experimenters have tuning-eye condenser checkers which can have greatly increased utility with a few simple changes in their circuits (Figs. 1 and 2).

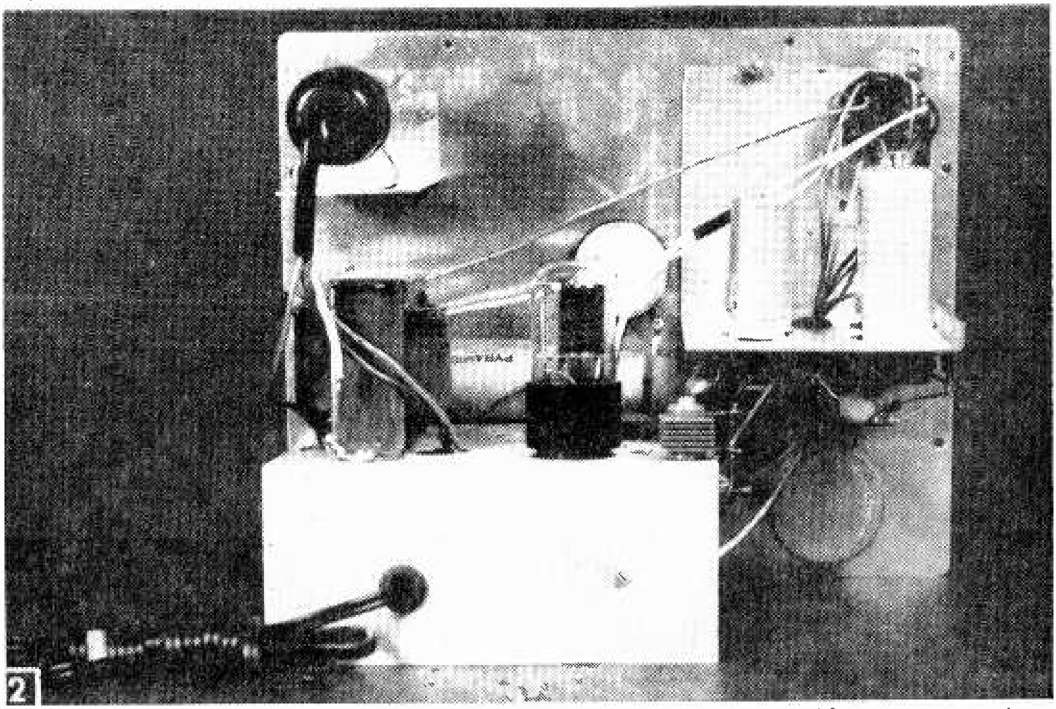
Such units as the Heathkit C-3 and Eico 950 provide an accurate means of measuring capacitance, leakage, and shorted condensers *out of the circuit.* Due to resistance that may be in parallel with the condenser, however, other units such as the Heathkit CT-1 or Eico 955 are required to check condensers *in the circuit.*

Changes you can make will enable the regular checkers to do the in-circuit testing and still retain their original advantages of versatility and accuracy for the out-of-circuit measurements.

**Short and Open Tests.** The in-circuit test principles are shown in Fig. 3.

In the short test, the grid of the eye tube is connected to a voltage divider with high voltage across it, while the condenser under test is connected between grid and ground. If the condenser is good, there will be a voltage drop between grid and ground (across the condenser), causing the eye to close. If it's shorted, the grid is at ground potential and the eye will open.

In the open test, connect a high frequency signal to the grid through the condenser under test. If the condenser is good, it will

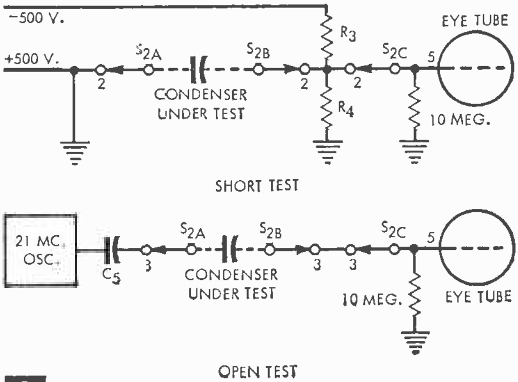


2 A look behind the panel of same checker discloses that most parts required for the modification are mounted on an aluminum angle in upper right corner.

pass the signal and place an RF voltage on the grid, causing the eye to close. If it's open, the signal will not pass, there will be no voltage on the grid and the eye will open.

Resistance in parallel with the condenser will have little effect on these tests, as long as it has an appreciable value of 25 ohms or more. In the short test, the resistance is merely in parallel with the grid resistors, while in the open test, the reactance of a good condenser to the high frequency signal would be much less than any appreciable resistance.

**Requirements of the Modification** include a tube, coil, rotary switch, choke, and a few condensers and resistors. In addition, the Heathkit C-3 needs a small transformer to provide filament voltage without overloading the existing transformer windings.



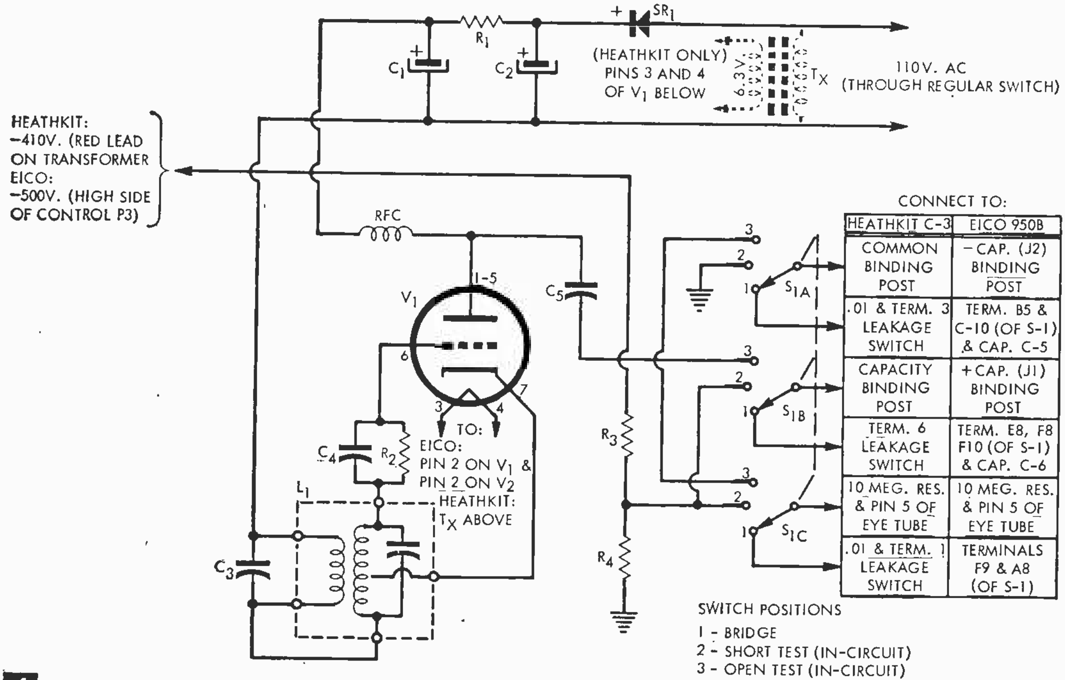

3 TEST PRINCIPLES

The schematic in Fig. 4 indicates connections for both the Heathkit C-3 and Eico 950. The same circuit may also be used with such testers as the Knight 503, Cornell-Dubilier BF-60, Pace C-20, etc., by referring to points of connection of the three-position switch. Essentially, these switch connections are:

Arm of A section: common capacity binding post.
Terminal 1 of A section: wires that went to the above.
Arm of B section: positive capacity binding post.
Terminal 1 of B section: wires that went to the above.
Arm of C section: grid pin of eye tube.
Terminal 1 of C section: wires that went to the above.

**Mounting the New Parts.** In the Eico 950, the switch was mounted in the upper left corner of the panel, as in Fig. 1. You can make an aluminum plate to cover the lettering on the panel, and place decals on the plate for the new lettering. A small aluminum chassis mounts on the back of the panel as in Fig. 2 to hold the tube and coil. The switch holds it in place.

Modifying the Heathkit C-3 is more difficult in that drilling must be done on the original chassis. You can mount the switch between the eye tube and the power factor control. Mount the tube and coil on the original chas-




**4** MODIFICATION SCHEMATIC

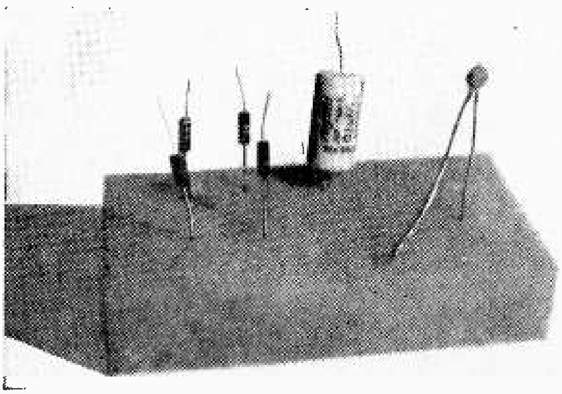
**MATERIALS LIST—IN-CIRCUIT MODIFICATION**

| Desig. | Size and Description |
|---|---|
| R1 | 2000-ohm, 1-watt wirewound resistor |
| R2 | 1-megohm, ½-watt resistor |
| R3 | .47-megohm, ½-watt resistor |
| R4 | 10K, ½-watt resistor |
| C1, C2 | 20 mfd, 150-volt electrolytic capacitors |
| C3 | 7.5-mmfd ceramic disk capacitor |
| C4 | 200-mmfd ceramic disk capacitor |
| C5 | .01-mfd, 200-volt capacitor |
| L1 | 21.8-mc converter IF transformer (Miller #6185) |
| RFC | 2.5-mh RF choke |
| SR1 | 65-ma. selenium rectifier |
| S1 | 3-pole, 3-position rotary switch (Mallory 3234J) |
| V1 | 6C4 tube |
| | Part below required for Heathkit C-3 and other units where original transformer filament winding is insufficient for additional tube: |
| Tx | 6.3-volt, .5-amp filament transformer (Merit P-2964) |

sis in a front-to-back line between the eye tube and main control. The small filament transformer can be installed in a vacant space under the chassis, in back.

**Operation.** Hold the test prods across the condenser being tested, by plugging them into the regular CAP terminals. Set the new switch to "short," and then to "open." If the eye tube shadow opens in either case, the condenser is bad—either shorted or open, depending on the position of the switch.

To measure capacity, leakage, or resistance as originally provided for by the bridge, set the new switch at "bridge." When making this test, the condenser being checked should be disconnected from the equipment.



## Parts Holder

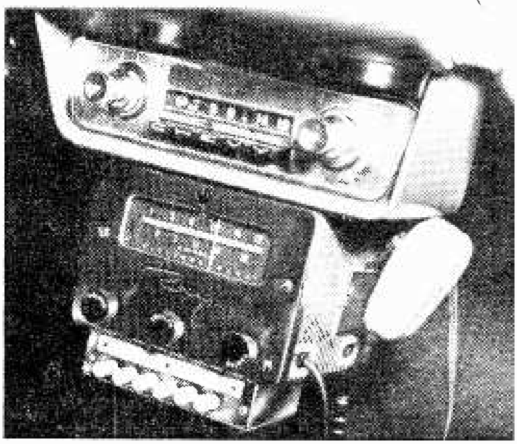
• A work bench can become a cluttered mess during the course of a construction project. As a result small parts become misplaced and frequently become hidden under schematics and tools. To avoid lost time, stick resistors, capacitors, and other small parts in plastic foam. This precaution will also prevent small parts from being pushed off the bench accidentally during the conduct of a construction effort. Plastic foam is also useful for parts storage.—F. H. FRANTZ.

# LOOKING OVER NEW PRODUCTS

## Superhet CB Transceiver

An improved version of the HE-15 series citizens band transceivers is the Model HE-15B with eight crystal-controlled transmitting channels accessible by removing a small front plate. Unit has 5 watts input, 3-way function switch, planetary vernier tuning, variable noise limiter, indicators for power "on" and RF power, connections for 115-volt ac line and 6- or 12-volt dc external power supply.

Receiver is tunable over entire 23-channel band. The transceiver measures 10¼ x 5½ x 6⅜ in. and tubes include 2 6AU8A/6E8A, 6AL5, 6V6, 12AX7, and 6AW8. Priced at $59.50.—Lafayette Radio Electronics Corp., Dept. RTE, 111 Jericho Turnpike, Syosset, N. Y.

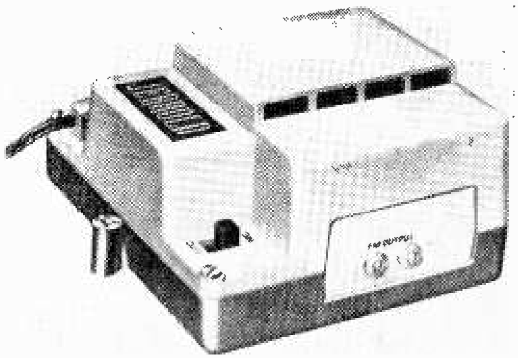


## CB Crystal Switcher

This new crystal switcher increases available transmitting channels on citizens band transceivers. The Model CS-6 switcher has quick pushbutton selection, with a plastic "channel identification" plate above the buttons so that user can identify each channel by marking in the number with a crayon. Plate can be wiped clean and remarked if crystal is changed.

Unit attaches to either fixed or mobile Regency transceiver, includes case with satin nickel-plate finish and measures 6¼ in. wide, 3 in. deep and 1¼ in. high. Priced at $19.95 net, without crystals.—Regency Electronics Inc., Dept. RTE, 7900 Pendleton Pike, Indianapolis 26, Ind.

## FM Range Extender

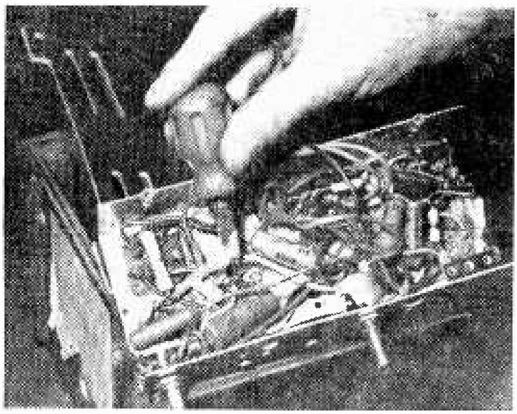


Primary reception area of FM tuners and FM radios is said to be doubled by this new FM antenna amplifier, to improve the new multiplex reception and add characteristics of high fidelity sound to inexpensive tuners. Offering a high gain of 20 *db* minimum over the entire FM band, the Model FMX one-tube antenna amplifier eliminates background noise and signal drift.

The unit is intended for home installation anywhere between antenna and tuner—in attic, closet, or on any wall or flat surface where a 117-volt 60-cycle outlet is available. It is designed for all-day continuous operation on current similar to that used by a clock.

Weighing slightly more than 2 lbs., the amplifier uses the new 6DJ8 frame grid tube and has a shut-off switch for disconnection when not in use for a long period. Priced at $29.95.—Jerrold Electronics Corp., Dept. RTE, 15th and Lehigh Ave., Philadelphia 32, Pa.

# LOOKING OVER NEW PRODUCTS



## Epoxy Compound Cold Solder

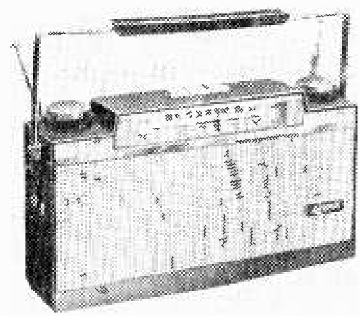
A silver conductive epoxy compound solder that cures in four hours has been developed for use at low temperature on components which are sensitive to heat. Anchor *Shurbond 102* bonds firmly to metallic or non-metallic surfaces, has claimed shear strength of 3200 *psi* and volume resistivity approaching that of metals.

Since no flux is used, there is no contamination or residue problem. Available in paste form with liquid hardener, it offers new bonding possibilities with dissimilar metals in applications where conventional soldering or brazing have proved ineffective.—Anchor Alloys, Dept. RTE, 968 Meeker Ave., Brooklyn 22, N. Y.

## Portable FM-AM Radio

Powered by four C-type cells, this nine-transistor, portable FM-AM radio features pushbutton controls for "off," FM, and AM, a high-ratio slide rule dial, 3 x 5-in. speaker, earphone, and built-in handle. Two 22-in. collapsible telescopic antennas are used for FM, built-in ferrite loop for AM.

In addition to the nine transistors, the circuit includes four diodes and a varistor. Unit is sized at 9⅞ x 5¾ x 2½ in., and priced at $49.95.—Lafayette Radio Electronics Corp., Dept. RTE, 111 Jericho Turnpike, Syosset, N. Y.

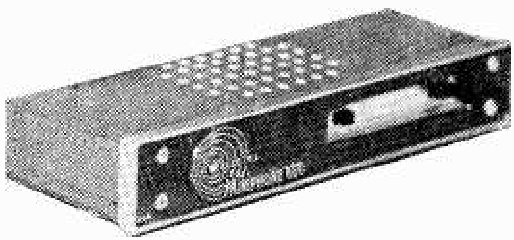


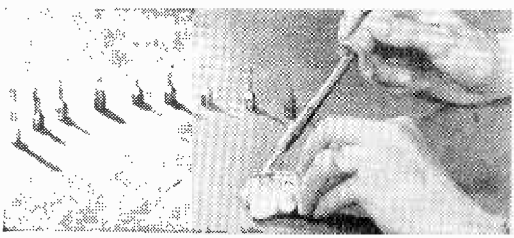
## No-License 2-Way Radio

New desk model *Miniphone 600* makes it possible to transmit and receive messages between your office or switchboard and any number of men carrying *Miniphone 400* shirt pocket walkie-talkies up to three miles away, and without FCC licenses.

Fully transistorized units operate on single low-cost battery, have crystal-control transmitter and superhet receiver, automatic noise limiters, and unbreakable metal cases.

The "600" uses a plug-in antenna which can be placed inside to obtain greater range. The "400" may be used with a snap-on flexible antenna for pocket paging or with a built-in telescoping antenna for longer range. The units are priced at $99.50 for the "600" and $89.75 for the "400," which is only 1 in. thick and weighs but 10 oz.—Electra International Co., Dept. RTE, 1346 Foothill Blvd., La Canada, Calif.





## 20-Tip Soldering Iron

Originally developed for electronic equipment manufacturers, the versatile *Penline-120* is now available to home craftsmen through major dealers. Its 40-watt heater assembly is featured as ready for use with 20 different, interchangeable tips.—General Electric Co., Dept. RTE, Schenectady 5, N. Y.

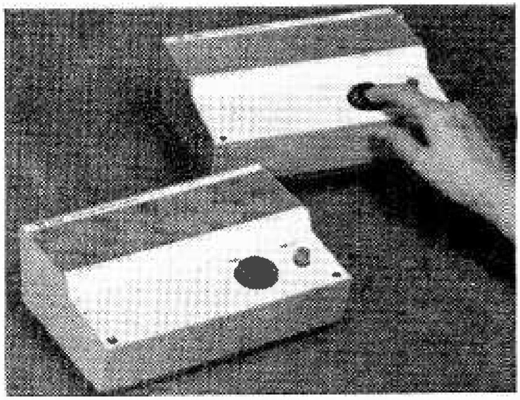
# LOOKING OVER NEW PRODUCTS

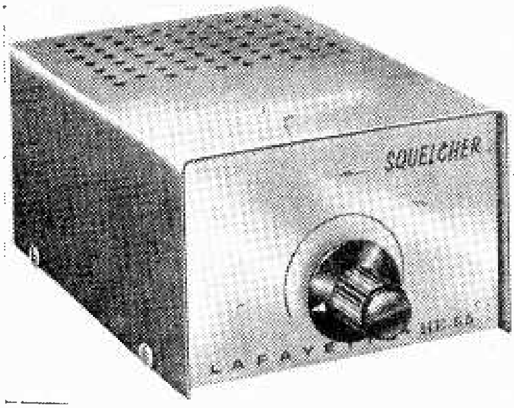
## Transistor Wireless Intercom

Completely transistorized and portable, this wireless intercom draws no more electric power per station than an electric clock. Operating from any ac outlet or dc power source, it serves as a two-way communicator in home, factory, office, or between nearby buildings on the same power line. It can also be used as an electronic baby sitter by setting the press-to-talk button on "lock." To prevent missed calls, the volume control cannot be turned below an audible level.

Due to the low power and a "squelch" circuit, this new *Knight-Kit* needs no on-off switch, has no hum, and is virtually heat-free. Each unit is a "master," housed in an egg-shell white or oxford gray moulded plastic case, 3 x 8¼ x 5¾ in. Additional units may be added to the system.

The two-unit kit (#83Y991) is priced at $45.90, including all parts, construction manual, wire, and solder. Single-unit kits (#83Y992), to expand the system, are offered at $22.95—Allied Radio Corp., Dept. RTE, 100 N. Western Ave., Chicago 80, Ill.






## Noise Eliminator

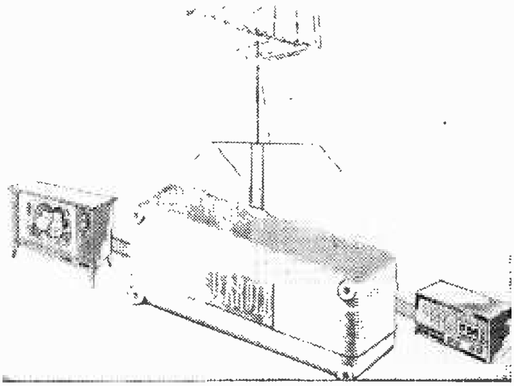
Planned as a noise eliminator for all superhet transceivers or receivers, the "Squelcher" effectively reduces noise from ignition systems and other sources, and quiets the receiver when no signal is being received. The Model HE-55 is especially designed to increase sensitivity of mobile transceivers when operating in traffic. Circuit is considered hum-free and uses two tubes: 6AL5 and 12AX7.

The blue-gray perforated case has a satin aluminum faceplate and weighs 1¼ lbs. Unit is furnished with instructions for installation and operation, plus cable, for $10.95.—Lafayette Radio Electronics Corp., Dept. RTE, 111 Jericho Turnpike, Syosset, N. Y.

## TV-FM Antenna Splitter

Simultaneous reception for television and an FM receiver from a common antenna, without interference or loss of signal to either set, is offered by the Model TX-FM antenna splitter.

This small band pass filter in an unbreakable housing, separates FM from television frequencies, and filters the FM frequencies (88 to 108 *mc*) through to the FM set. The unit is intended for use with an ordinary broad band VHF television antenna and designed to provide a high degree of signal isolation. Price $5.95.—Jerrold Electronics Corp., Dept. RTE, 15th and Lehigh Ave., Philadelphia 32, Pa.



# WHITE'S RADIO LOG

**An up-to-date broadcasting directory**
**AM, FM, TV and Short Wave Stations**

Vol. 39 No. 2



## QUICK REFERENCE INDEX



## U. S. and Canadian AM Stations by Frequency

U.S. stations listed alphabetically by states within groups, Canadian stations precede U.S.

Abbreviations: Kc., frequency in kilocycles; W.P., watt power; d—operates daytime only. Wave length is given in meters

### 540—555.5

| | W.P. |
|---|---|
| CBT Grand Falls, N.F. | 10000 |
| CBK Regina, Sask. | 50000 |
| KVIP Redding, Calif. | 5000d |
| KFMB San Diego, Calif. | 5000 |
| WGTO Cypress Gardens, Florida | 50000d |
| WDAK Columbus, Ga. | 5000 |
| KBRV Soda Springs, Idaho | 500d |
| KWMT Ft. Dodge, Iowa | 5000d |
| WDMV Pocomoke City, Md. | 500d |
| WBIC Islip, N.Y. | 250d |
| WETC Wendell-Zebulon, N.C. | 250d |
| WARD Canonsburg, Pa. | 250d |
| WYNN Florence, S.C. | 250d |
| WDXN Clarksville, Tenn. | 1000d |
| WRIC Richlands, Va. | 1000d |

### 550—545.1

| Station | W.P. |
|---|---|
| CFNB Fredericton, N.B. | 50000 |
| CFBR Sudbury, Ont. | 1000d |
| CHLN Three Rivers, Que. | 10000 |
| CKPG Prince George, B.C. | 250 |
| KENI Anchorage, Alaska | 5000 |
| KOY Phoenix, Ariz. | 5000 |
| KAFY Bakersfield, Calif. | 1000 |
| KRAI Craig, Colo. | 1000 |
| WAYR Orange Park, Fla. | 1000d |
| WGGA Gainesville, Ga. | 5000 |
| KMVI Wailuku, Hawaii | 1000 |
| KFRM Concordia, Kansas | 5000d |
| WCBI Columbus, Miss. | 1000 |
| KSD St. Louis, Mo. | 5000 |
| KOPR Butte, Mont. | 1000 |
| WGR Buffalo, N.Y. | 5000 |
| WDBM Statesville, N.C. | 500d |
| KFYR Bismarck, N.Dak. | 5000 |
| WKRC Cincinnati, Ohio | 5000 |
| KOAC Corvallis, Oreg. | 5000 |
| WHLM Bloomsburg, Pa. | 1000 |
| WPAB Ponce, P.R. | 5000 |
| WXTR Pawtucket, R.I. | 1000 |
| KCRS Midland, Tex. | 5000 |
| KTSA San Antonio, Tex. | 5000 |
| WDEV Waterbury, Vt. | 5000 |
| WSVA Harrisonburg, Va. | 5000 |
| KARI Blaine, Wash. | 500d |
| WSAU Wausau, Wis. | 5000 |

### 560—535.4

| Station | W.P. |
|---|---|
| CJDC Dawson Creek, B.C. | 1000 |
| CJKL Kirkland Lake, Ont. | 5000 |
| CFOS Owen Sound, Ont. | 5000 |
| WOOF Dothan, Ala. | 5000d |
| KYUM Yuma, Ariz. | 1000 |
| KSFO San Fran., Calif. | 5000 |
| KLZ Denver, Colo. | 5000 |
| WQAM Miami, Fla. | 5000 |
| WIND Chicago, Ill. | 5000 |
| WMIK Middlesboro, Ky. | 500d |
| WGAN Portland, Maine | 5000 |
| WHYN Springfield, Mass. | 1000 |
| WQTE Monroe, Mich. | 500d |
| WEBC Duluth, Minn. | 5000 |
| KWTO Springfield, Mo. | 5000 |
| KMON Great Falls, Mont. | 5000 |
| WGAI Elizabeth City, N.C. | 1000 |
| WFIL Philadelphia, Pa. | 5000 |
| WIS Columbia, S.C. | 5000 |
| WHBQ Memphis, Tenn. | 5000 |
| KFDM Beaumont, Tex. | 5000 |
| KPQ Wenatchee, Wash. | 5000 |
| WJLS Beckley, W.Va. | 5000 |

### 570—526.0

| Station | W.P. |
|---|---|
| CKEK Cranbrook, B.C. | 1000 |
| CKCQ Quesnel, B.C. | 1000 |
| CFCB Corner Brook, N.F. | 1000 |
| CJEM Edmundston, N.B. | 1000 |
| WAAX Gadsden, Ala. | 5000 |
| KCNO Alturas, Calif. | 5000 |
| KLAC Los Angeles, Calif. | 5000 |
| WGMS Washington, D.C. | 5000 |
| WACL Waycross, Ga. | 5000 |
| WKYB Paducah, Ky. | 1000 |
| WVMI Biloxi, Miss. | 1000d |
| KGRT Las Cruces, N.Mex. | 5000d |
| WMCA New York, N.Y. | 5000 |
| WSYR Syracuse, N.Y. | 5000 |
| WWNC Asheville, N.C. | 5000 |
| WLLE Raleigh, N.C. | 500d |
| WKBN Youngstown, Ohio | 5000 |
| WNAX Yankton, S.Dak. | 5000 |
| WFAA Dallas, Tex. | 5000 |
| WBAP Ft. Worth, Tex. | 5000 |
| KLUB Salt Lake City, Utah | 5000 |
| KVI Seattle, Wash. | 5000 |
| WMAM Marinette, Wis. | 5000 |

### 580—516.9

| Station | W.P. |
|---|---|
| CJFX Antigonish, N.S. | 5000 |
| CFRA Ottawa, Ont. | 50000 |
| CKEY Toronto, Ont. | 5000 |
| CKPR Ft. William, Ont. | 5000 |
| CKUA Edmonton, Alta. | 10000d |
| CKY Winnipeg, Man. | 50000 |
| WABT Tuskegee, Ala. | 500d |
| KTAN Tucson, Ariz. | 5000 |
| KMJ Fresno, Calif. | 5000 |
| KUBC Montrose, Colo. | 5000 |
| WDBO Orlando, Fla. | 5000 |
| WGAC Augusta, Ga. | 5000 |
| KFXD Nampa, Idaho | 5000 |
| WILL Urbana, Ill. | 5000d |
| KSAC Manhattan, Kans. | 5000 |
| WIBW Topeka, Kans. | 5000 |
| KALB Alexandria, La. | 5000 |
| WTAG Worcester, Mass. | 5000 |
| WELO Tupelo, Miss. | 1000 |
| WAGR Lumberton, N.C. | 500 |
| KWIN Ashland, Oreg. | 1000 |
| WHP Harrisburg, Pa. | 5000 |
| WKAQ San Juan, P.R. | 5000 |
| KOBH Hot Springs, S.Dak. | 500d |
| WRKH Rockwood, Tenn. | 1000d |
| KDAV Lubbock, Tex. | 500d |
| WLES Lawrenceville, Va. | 500d |
| WCHS Charleston, W.Va. | 5000 |
| WKTY LaCrosse, Wis. | 5000 |

### 590—508.2

| Station | W.P. |
|---|---|
| CFAR FlinFlon, Man. | 1000 |
| CKRS Jonquiere, Que. | 1000 |
| VOCM St. Johns, N.F. | 10000 |
| KHAR Anchorage, Alaska | 5000 |
| WRAG Carrollton, Ala. | 1000d |
| KBHS Hot Springs, Ark. | 5000d |
| KFXM San Bernardino, Cal. | 1000 |
| KCSJ Pueblo, Colo. | 1000 |
| WDLP Panama City, Fla. | 1000 |
| WPLO Atlanta, Ga. | 5000 |
| KGMB Honolulu, Hawaii | 5000 |
| KID Idaho Falls, Idaho | 5000 |
| WBBY Wood River, Ill. | 500d |
| WVLK Lexington, Ky. | 5000 |
| WEEI Boston, Mass. | 5000 |
| WKZO Kalamazoo, Mich. | 5000 |
| WOW Omaha, Nebr. | 5000 |
| WROW Albany, N.Y. | 5000 |
| WGTM Wilson, N.C. | 5000 |
| KUGN Eugene, Oreg. | 5000 |
| WARM Scranton, Pa. | 5000 |
| WMBS Uniontown, Pa. | 1000 |
| KTBC Austin, Tex. | 5000 |
| KSUB Cedar City, Utah | 1000 |
| WLVA Lynchburg, Va. | 1000 |
| KHQ Spokane, Wash. | 5000 |

### 600—499.7

| Station | W.P. |
|---|---|
| CFCF Montreal, Que. | 5000 |
| CFCH North Bay, Ont. | 10000 |
| CFQC Saskatoon, Sask. | 5000 |
| CJOR Vancouver, B.C. | 10000 |
| CKCL Truro, N.S. | 1000 |
| WIRB Enterprise, Ala. | 1000 |
| KCLS Flagstaff, Ariz. | 5000 |
| KVCV Redding, Calif. | 1000 |
| KOGO San Diego, Calif. | 5000 |
| KZIX Ft. Collins, Colo. | 1000d |
| WICC Bridgeport, Conn. | 5000 |
| WPDQ Jacksonville, Fla. | 5000 |
| WMT Cedar Rapids, Iowa | 5000 |
| WWOM New Orleans, La. | 1000d |
| WFST Caribou, Maine | 5000d |
| WCAO Baltimore, Md. | 5000 |
| WLST Escanaba, Mich. | 1000d |
| WTAC Flint, Mich. | 1000 |
| KGEZ Kalispell, Mont. | 2000 |
| WCVP Murphy, N.C. | 1000d |
| WSJS Winston-Salem, N.C. | 5000 |
| KSJB Jamestown, N.D. | 5000 |
| WFRM Coudersport, Pa. | 1000d |
| WAEL Mayaguez, P.R. | 1000 |
| WREC Memphis, Tenn. | 5000 |
| KROD El Paso, Tex. | 5000 |
| KERB Kermit, Tex. | 1000d |
| KTBB Tyler, Tex. | 1000 |

### 610—491.5

| Station | W.P. |
|---|---|
| CHNC New Carlisle, Que. | 5000 |
| CJAT Trail, B.C. | 1000 |
| CKKL Thompson, Man. | 1000 |
| CKTB St. Catharines, Ont. | 10000 |
| WSGN Birmingham, Ala. | 5000 |
| KFAR Fairbanks, Alaska | 5000 |
| KAVL Lancaster, Calif. | 1000 |
| KFRC San Francisco, Calif. | 5000 |
| WCKR Miami, Fla. | 5000 |
| WDEB Pensacola, Fla. | 500d |
| WCEH Hawkinsville, Ga. | 500d |
| WRUS Russellville, Ky. | 500d |
| KDAL Duluth, Minn. | 5000 |
| WDAF Kansas City, Mo. | 5000 |
| KOJM Havre, Mont. | 1000 |
| WGIR Manchester, N.H. | 5000 |
| KGGM Albuquerque, N.Mex. | 5000 |
| WAYS Charlotte, N.C. | 5000 |
| WTVN Columbus, Ohio | 5000 |
| WIP Philadelphia, Pa. | 5000 |
| KILT Houston, Tex. | 5000 |
| KVNU Logan, Utah | 5000 |
| WSLS Roanoke, Va. | 5000 |
| WHPL Winchester, Va. | 500d |
| KEPR Kennewick, Wash. | 5000 |

### 620—483.6

| Station | W.P. |
|---|---|
| CFCL Timmins, Ont. | 10000 |
| CKCK Regina, Sask. | 5000 |
| KTAR Phoenix, Ariz. | 5000 |
| KNGS Hanford, Calif. | 1000 |
| KWSD Mt. Shasta, Calif. | 1000d |
| KSTR Grand Junction, Colo. | 5000d |
| WSUN St. Petersburg, Fla. | 5000 |
| WTRP LaGrange, Ga. | 1000d |
| KWAL Wallace, Idaho | 1000 |
| KMNS Sioux City, Iowa | 1000 |
| WTMT Louisville, Ky. | 500d |
| WLBZ Bangor, Maine | 5000 |
| WJDX Jackson, Miss. | 5000 |
| WVNJ Newark, N.J. | 5000 |
| WHEN Syracuse, N.Y. | 5000 |
| WDNC Durham, N.C. | 5000 |
| KGW Portland, Oreg. | 5000 |
| WHJB Greensburg, Pa. | 1000 |
| WCAY Cayce, S.C. | 500d |
| WATE Knoxville, Tenn. | 5000 |
| KWFT Wichita Falls, Tex. | 5000 |
| WCAX Burlington, Vt. | 5000 |
| WWNR Beckley, W.Va. | 1000 |
| WTMJ Milwaukee, Wis. | 5000 |

### 630—475.9

| Station | W.P. |
|---|---|
| CFCO Chatham, Ont. | 1000 |
| CKAR Huntsville, Ont. | 1000 |
| CHLT Sherbrooke, Que. | 5000 |
| CFCY Charlottetown, P.E.I. | 5000 |
| CJET Smith Falls, Ont. | 1000 |
| CKRC Winnipeg, Man. | 5000 |
| CKOV Kelowna, B.C. | 1000 |
| CKYL Peace River, Alta. | 1000 |
| WAVU Albertville, Ala. | 1000d |
| WJDB Thomasville, Ala. | 1000d |
| KJNO Juneau, Alaska | 1000 |
| KVMA Magnolia, Ark. | 1000d |
| KIDD Monterey, Calif. | 1000 |
| KHOW Denver, Colo. | 5000 |
| WMAL Washington, D.C. | 5000 |
| WSAV Savannah, Ga. | 5000 |
| WNEG Toccoa, Ga. | 500d |
| KIDO Boise, Idaho | 5000 |

| Kc. Wave Length | W.P. |
|---|---|
| WLAP Lexington, Ky. | 5000 |
| KTIB Thibodaux, La. | 500d |
| WJMS Ironwood, Mich. | 1000 |
| KDWB So. St. Paul, Minn. | 5000 |
| KXOK St. Louis, Mo. | 5000 |
| KGVW Belgrade, Mont. | 1000d |
| KOH Reno, Nev. | 5000 |
| KLEA Lovington, N.Mex. | 500d |
| WIRC Hickory, N.C. | 1000d |
| WMFD Wilmington, N.C. | 1000 |
| KWRO Coquille, Oreg. | 5000d |
| WEJL Scranton, Pa. | 500d |
| WKYN San Juan, P.R. | 1000 |
| WPRO Providence, R.I. | 5000 |
| KGFX Pierre, S.Dak. | 250 |
| KMAC San Antonio Tex. | 5000 |
| KSXX Salt Lake City, Utah | 1000d |
| KGDN Edmunds, Wash. | 5000d |
| KZUN Opportunity, Wash. | 500d |

## 640—468.5

| | |
|---|---|
| CBN St. John's, N.F. | 10000 |
| KFI Los Angeles, Calif. | 50000 |
| WOI Ames, Iowa | 5000 |
| WHLO Akron, Ohio | 1000 |
| WNAD Norman, Okla. | 1000d |

## 650—461.3

| | |
|---|---|
| KORL Honolulu, Hawaii | 10000 |
| WSM Nashville, Tenn. | 50000 |
| KIKK Pasadena, Texas | 250d |

## 660—454.3

| | |
|---|---|
| KMEO Omaha, Nebr. | 500d |
| WNBC New York, N.Y. | 50000 |
| WESC Greenville, S.C. | 10000d |
| KSKY Dallas, Tex. | 1000 |

## 670—447.5

| | |
|---|---|
| WMAQ Chicago, Ill. | 50000 |

## 680—440.9

| | |
|---|---|
| CHFA Edmonton, Alta. | 5000d |
| CHLO St. Thomas, Ont. | 1000 |
| CJOB Winnipeg, Man. | 10000 |
| CKGB Timmins, Ont. | 10000 |
| KNBC San Fran., Calif. | 50000 |
| WPIN St. Petersburg, Fla. | 1000d |
| WCTT Corbin, Ky. | 1000 |
| WCBM Baltimore, Md. | 10000 |
| WNAC Boston, Mass. | 50000 |
| WDBC Escanaba, Mich. | 1000 |
| KFEQ St. Joseph, Mo. | 5000 |
| WINR Binghamton, N.Y. | 1000 |
| WRVM Rochester, N.Y. | 250d |
| WPTF Raleigh, N.C. | 50000 |
| WISR Butler, Pa. | 250d |
| WAPA San Juan, P.Rico | 10000 |
| WMPS Memphis, Tenn. | 10000 |
| KENS San Antonio, Tex. | 50000 |
| KOMW Omak, Wash. | 1000d |
| WCAW Charleston, W.Va. | 250 |

## 690—434.5

| | |
|---|---|
| CBU Vancouver, B.C. | 10000 |
| CBF Montreal, Que. | 50000 |
| WVOK Birmingham, Ala. | 50000d |
| KVNA Flagstaff, Ariz. | 1000 |
| KEVT Tucson, Ariz. | 250d |
| KBBA Benton, Ark. | 250d |
| XETRA Los Angeles, Calif. | 50000 |
| KAPI Pueblo, Colo. | 250d |
| WADS Ansonia, Conn. | 500d |
| WAPE Jacksonville, Fla. | 25000d |
| KULA Honolulu, Hawaii | 10000 |
| KBLI Blackfoot, Idaho | 1000d |
| KGGF Coffeyville, Kans. | 10000 |
| WTIX New Orleans, La. | 5000 |
| KTCR Minneapolis, Minn. | 500d |
| KSTL St. Louis, Mo. | 1000d |
| KTCI Terrytown, Nebr. | 1000d |
| KRCO Prineville, Oreg. | 1000d |
| WXUR Media, Pa. | 500 |
| KUSD Vermillion, S.Dak. | 1000d |
| KHEY El Paso, Tex. | 10000 |
| KPET Lamesa, Tex. | 250 |
| KZEY Tyler, Tex. | 250d |
| WCYB Bristol, Va. | 10000d |
| WNNT Warsaw, Va. | 250d |
| WELD Fisher, W.Va. | 500d |

## 700—428.3

| | |
|---|---|
| WLW Cincinnati, Ohio | 50000 |

## 710—422.3

| | |
|---|---|
| CJSP Leamington, Ont. | 1000d |
| CFRG Gravelbourg, Sask. | 5000d |
| CKVM Ville Marie, Que. | 1000 |
| WKRG Mobile, Ala. | 1000 |
| KMPC Los Angeles, Calif. | 50000 |
| KBTR Denver, Colo. | 5000 |
| WGBS Miami, Fla. | 50000 |
| WROM Rome, Ga. | 1000d |
| KEEL Shreveport, La. | 50000 |
| WHB Kansas City, Mo. | 10000 |
| WOR New York, N.Y. | 50000 |
| DZRH Manila, P.I. | 10000 |
| WKJB Mayaguez, P.Rico | 1000 |
| WTPR Paris, Tenn. | 250d |



| Kc. Wave Length | W.P. |
|---|---|
| KGNC Amarillo, Tex. | 10000 |
| KURV Edinburg, Tex. | 250 |
| KIRO Seattle, Wash. | 50000 |
| WDSM Superior, Wis. | 5000 |

## 720—416.4

| | |
|---|---|
| WGN Chicago, Ill. | 50000 |

## 730—410.7

| | |
|---|---|
| CJNR Blind River, Ont. | 1000 |
| CKAC Montreal, Que. | 50000 |
| CKDM Dauphin, Man. | 10000 |
| CKLG No. Vancouver, B.C. | 10000 |
| WJMW Athens, Ala. | 1000 |
| KFQD Anchorage, Alaska | 10000 |
| KSUD W. Memphis, Ark. | 250d |
| WKTG Thomasville, Ga. | 1000d |
| KLOE Goodland, Kans. | 1000d |
| WFMW Madisonville, Ky. | 250d |
| WMTC Van Cleve, Ky. | 1000d |
| KTRY Bastrop, La. | 250d |
| WARB Covington, La. | 250d |
| WMMS Bath, Maine | 1000d |
| WACE Chicopee, Mass. | 5000d |
| KWRE Warrenton, Mo. | 1000d |
| KWOA Worthington, Minn. | 1000d |
| KURL Billings, Mont. | 500d |
| KVOD Albuquerque, N.Mex. | 1000d |
| WDOS Oneonta, N.Y. | 1000d |
| WFMC Goldsboro, N.C. | 1000d |
| WOHS Shelby, N.C. | 1000d |
| WMGS Bowling Green, Ohio | 1000d |
| KBOY Medford, Oreg. | 1000d |
| WNAK Nanticoke, Pa. | 1000d |
| WPIT Pittsburgh, Pa. | 5000d |
| WPAL Charleston, S.C. | 1000d |
| WLIL Lenoir, Tenn. | 1000d |
| KRZY Grand Prairie, Tex. | 500d |
| KSVN Ogden, Utah | 1000d |
| WPIK Alexandria, Va. | 1000d |
| WMNA Gretna, Va. | 1000d |
| KULE Ephrata, Wash. | 1000d |
| WXMT Merrill, Wis. | 1000d |

## 740—405.2

| | |
|---|---|
| CBXA Edmonton, Alta. | 50000 |
| CBL Toronto, Ont. | 50000 |
| WBAM Montgomery, Ala. | 50000d |
| KUEQ Phoenix, Ariz. | 1000d |
| KBIG Avalon, Calif. | 10000d |
| KCBS San Francisco, Calif. | 50000 |
| KSSS Colo. Springs, Colo. | 1000 |
| KVFC Cortez, Colo. | 1000d |
| WKIS Orlando, Fla. | 5000 |
| KYME Boise, Idaho | 500d |
| WVLN Olney, Ill. | 250d |
| KBOE Oskaloosa, Iowa | 250d |
| WNOP Newport, Ky. | 1000d |
| WFRB Frostburg, Md. | 250d |
| WTAO Cambridge, Mass. | 250d |
| KPBM Carlsbad, N.Mex. | 1000d |
| WGSM Huntington, N.Y. | 1000d |
| WMBL Morehead City, N.C. | 1000d |
| WPAQ Mount Airy, N.C. | 10000d |
| KRMG Tulsa, Okla. | 50000 |
| WVCH Chester, Pa. | 1000d |
| WIAC San Juan, P.Rico | 10000 |
| WBAW Barnwell, S.C. | 1000d |
| WIRJ Humboldt, Tenn. | 250d |
| WJIG Tullahoma, Tenn. | 250d |
| KTRH Houston, Tex. | 50000 |
| KCMC Texarkana, Tex. | 1000 |
| WBCI Williamsburg, Va. | 500d |

## 750—399.8

| | |
|---|---|
| WSB Atlanta, Ga. | 50000 |
| WBMD Baltimore, Md. | 1000d |
| KMMJ Grand Island, Neb. | 10000d |
| WHEB Portsmouth, N.H. | 1000d |
| KSEO Durant, Okla. | 250d |
| KXL Portland, Oreg. | 50000 |
| WPDX Clarksburg, W.Va. | 1000d |

## 760—394.5

| | |
|---|---|
| KGU Honolulu, Hawaii | 10000 |
| WJR Detroit, Mich. | 50000 |
| WCPS Tarboro, N.C. | 1000d |

## 770—389.4

| | |
|---|---|
| KUOM Minneapolis, Minn. | 5000d |
| WCAL Northfield, Minn. | 5000d |
| WEW St. Louis, Mo. | 1000d |
| KOB Albuquerque, N.Mex. | 50000 |
| WABC New York, N.Y. | 50000 |
| KXA Seattle, Wash. | 1000d |

## 780—384.4

| | |
|---|---|
| WBBM Chicago, Ill. | 50000 |
| WJAG Norfolk, Neb. | 1000d |
| WCKB Dunn, N.C. | 1000d |
| WBBO Forest City, N.C. | 1000d |
| KSPI Stillwater, Okla. | 250d |
| WAVA Arlington, Va. | 1000d |

## 790—379.5

| | |
|---|---|
| CKMR Newcastle, N.B. | 1000 |
| CHB Halifax, N.S. | 10000 |
| CKSO Sudbury, Ont. | 10000 |
| WTUG Tuscaloosa, Ala. | 500d |
| KCEE Tucson, Ariz. | 5000d |
| KOSY Texarkana, Ark. | 1000 |

| Kc. Wave Length | W.P. |
|---|---|
| KDAN Eureka, Calif. | 5000d |
| KABC Los Angeles, Calif. | 5000 |
| WLBE Leesburg, Fla. | 5000 |
| WFUN Miami Beach, Fla. | 5000 |
| WPFA Pensacola, Fla. | 1000d |
| WQXI Atlanta, Ga. | 5000 |
| WGRA Cairo, Ga. | 1000d |
| KEST Boise, Idaho | 1000d |
| WRMS Beardstown, Ill. | 500d |
| KXXX Colby, Kans. | 5000d |
| WAKY Louisville, Ky. | 5000 |
| WRUM Rumford, Me. | 1000d |
| WSGW Saginaw, Mich. | 5000 |
| WSJC Magee, Miss. | 1000d |
| KGHL Billings, Mont. | 5000 |
| WWNY Watertown, N.Y. | 1000 |
| WLSV Wellsville, N.Y. | 1000d |
| WTNC Thomasville, N.C. | 1000d |
| KFGO Fargo, N.Dak. | 5000 |
| KWIL Albany, Oreg. | 1000 |
| WAEB Allentown, Pa. | 500 |
| WPIC Sharon, Pa. | 1000d |
| WEAN Providence, R.I. | 5000 |
| WWBD Bamberg, S.C. | 1000d |
| WETB Johnson City, Tenn. | 1000d |
| WMC Memphis, Tenn. | 5000 |
| KTHT Houston, Tex. | 5000 |
| KFYO Lubbock, Tex. | 5000 |
| KUTA Blanding, Utah | 1000d |
| WSIG Mount Jackson, Va. | 1000d |
| WTAR Norfolk, Va. | 5000 |
| KGMI Bellingham, Wash. | 5000 |
| KNEW Spokane, Wash. | 5000 |
| WEAQ Eau Claire, Wis. | 5000 |

## 800—374.8

| | |
|---|---|
| CHAB Moose Jaw, Sask. | 10000 |
| CKOK Penticton, B.C. | 10000 |
| CFOB Ft. Frances, Ont. | 1000 |
| CJLX Ft. William, Ont. | 5000 |
| CJBQ Belleville, Ont. | 1000 |
| CKLW Windsor, Ont. | 50000 |
| CHRC Quebec, Que. | 10000 |
| CJAD Montreal, Que. | 10000 |
| VOWR St. Johns, N.F. | 1000 |
| WHOS Decatur, Ala. | 1000d |
| WMGY Montgomery, Ala. | 1000d |
| KINY Juneau, Alaska | 5000 |
| KAGH Crossett, Ark. | 250d |
| KVOM Morrilton, Ark. | 250d |
| KUZZ Bakersfield, Calif. | 250d |
| KDAD Weed, Calif. | 1000d |
| KBRN Brighton, Colo. | 500d |
| WLAD Danbury, Conn. | 250d |
| WSUZ Palatka, Fla. | 1000d |
| WJAT Swainsboro, Ga. | 1000d |
| KXIC Iowa City, Iowa | 1000d |
| WBOK New Orleans, La. | 1000d |
| WCCM Lawrence, Mass. | 1000d |
| KREI Farmington, Mo. | 1000d |
| KDBM Dillon, Mont. | 1000d |
| WKDN Camden, N.J. | 1000d |
| KJEM Okla City, Okla. | 250d |
| KPDQ Portland, Oreg. | 1000d |
| WCHA Chambersburg, Pa. | 1000d |
| WDSC Dillon, S.C. | 1000d |
| WEAB Greer, S.C. | 250d |
| WDEH Sweetwater, Tenn. | 1000d |
| KDDD Dumas, Tex. | 250d |
| KBUH Brigham City, Utah | 250d |
| WSVS Crewe, Va. | 5000d |
| WKEE Huntington, W.Va. | 1000d |
| WDUX Waupaca, Wis. | 1000d |

## 810—370.2

| | |
|---|---|
| CFAX Victoria, B.C. | 1000d |
| KGO San Francisco, Calif. | 50000 |
| WABW Annapolis, Md. | 250d |
| KCMO Kansas City, Mo. | 50000 |
| WGY Schenectady, N.Y. | 50000 |
| WKBC N.Wilkesboro, N.C. | 1000d |
| WCEC Rocky Mount, N.C. | 1000d |
| WEDO McKeesport, Pa. | 1000d |
| WKVM San Juan, P.R. | 25000 |

## 820—365.6

| | |
|---|---|
| WAIT Chicago, Ill. | 5000d |
| WIKY Evansville, Ind. | 250d |
| WOSU Columbus, Ohio | 5000d |
| WFAA Dallas, Tex. | 50000 |
| WBAP Ft. Worth, Tex. | 50000 |

## 830—361.2

| | |
|---|---|
| KIKI Honolulu, Hawaii | 250 |
| WCCO Minneapolis, Minn. | 50000 |
| KBOA Kennett, Mo. | 1000d |
| WNYC New York, N.Y. | 1000 |

## 840—356.9

| | |
|---|---|
| WTUF Mobile, Ala. | 1000d |
| WRYM New Britain, Conn. | 1000d |
| WHAS Louisville, Ky. | 50000 |
| WVPO Stroudsburg, Pa. | 250d |

## 850—352.7

| | |
|---|---|
| CKVL Verdun, Que. | 50000 |
| CKRD Red Deer, Alta. | 10000 |
| WYDE Birmingham, Ala. | 10000 |
| KICY Nome, Alaska | 5000 |
| KOA Denver, Colo. | 50000 |
| WRUF Gainesville, Fla. | 5000 |
| WEAT W. Palm Beach, Fla. | 1000 |
| KIMO Hilo, Hawaii | 1000 |
| WHDH Boston, Mass. | 50000 |
| WKBZ Muskegon, Mich. | 1000 |

| Kc. Wave Length | W.P. |
|---|---|
| KFUO St. Louis, Mo. | 5000d |
| WKIX Raleigh, N.C. | 10000 |
| WJW Cleveland, Ohio | 10000 |
| WJAC Johnstown, Pa. | 250 |
| WEEU Reading, Pa. | 1000 |
| WABA Aquadilla, P.R. | 500 |
| WRAP Norfolk, Va. | 5000 |
| KTAC Tacoma, Wash. | 1000 |

## 860—348.6

| | |
|---|---|
| CHAK Inuvik, N.W.T. | 1000 |
| CJBC Toronto, Ont. | 50000 |
| WHRT Hartselle, Ala. | 250d |
| WAMI Opp, Ala. | 1000d |
| KIFN Phoenix, Ariz. | 1000d |
| KOSE Osceola, Ark. | 1000d |
| KWRF Warren, Ark. | 250d |
| KTRB Modesto, Calif. | 10000 |
| WOWW Naugatuck, Conn. | 250d |
| WAZE Clearwater, Fla. | 500d |
| WKKO Cocoa, Fla. | 1000d |
| WERD Atlanta, Ga. | 1000 |
| WDMG Douglas, Ga. | 5000d |
| WMRI Marion, Ind. | 250d |
| KWPC Muscatine, Iowa | 250d |
| KOAM Pittsburg, Kans. | 10000 |
| WSON Henderson, Ky. | 500d |
| WAYE Dundalk, Md. | 500d |
| WSBS Gt. Barrington, Mass. | 250d |
| KNUJ New Ulm, Minn. | 1000d |
| WMAG Forest, Miss. | 500d |
| KARS Belen, N. Mex. | 250d |
| WFMO Fairmont, N.C. | 1000d |
| KMFR Medford, Oreg. | 1000d |
| WAMO Pittsburgh, Pa. | 1000d |
| WTEL Philadelphia, Pa. | 250d |
| WLBG Laurens, S.C. | 1000d |
| WIVK Knoxville, Tenn. | 1000d |
| WMTS Murfreesboro, Tenn. | 250d |
| KFST Ft. Stockton, Tex. | 250d |
| KPAN Hereford, Tex. | 250d |
| KSFA Nacogdoches, Tex. | 1000d |
| KONO San Antonio, Tex. | 5000 |
| KWHO Salt Lake City, Utah | 1000d |
| WEVA Emporia, Va. | 1000d |
| WOAY Oak Hill, W.Va. | 10000d |
| WFOX Milwaukee, Wis. | 250d |

## 870—344.6

| | |
|---|---|
| KIEV Glendale, Calif. | 250d |
| KAIM Kaimuki, Hawaii | 5000 |
| WWL New Orleans, La. | 50000 |
| WKAR E. Lansing, Mich. | 5000d |
| WHCU Ithaca, N.Y. | 1000d |
| WGTL Kannapolis, N.C. | 1000d |
| WHOA San Juan, P.R. | 5000 |
| KJIM Ft. Worth, Tex. | 250d |
| WFLO Farmville, Va. | 1000d |

## 880—340.7

| | |
|---|---|
| WCBS New York, N.Y. | 50000 |
| WRRZ Clinton, N.C. | 1000d |
| WRFD Worthington, Ohio | 5000d |

## 890—336.9

| | |
|---|---|
| WLS Chicago, Ill. | 50000 |
| WHNC Henderson, N.C. | 1000d |
| KBYE Okla. City, Okla. | 1000d |

## 900—333.1

| | |
|---|---|
| CKTS Sherbrooke, Que. | 1000 |
| CHML Hamilton, Ont. | 5000 |
| CHNO Sudbury, Ont. | 10000 |
| CJBR Rimouski, Que. | 10000 |
| CKJL St. Jerome, Que. | 1000 |
| CJVI Victoria, B.C. | 10000 |
| CKBI Prince Albert, Sask. | 10000 |
| WATV Birmingham, Ala. | 1000d |
| WGOK Mobile, Ala. | 1000d |
| WOZK Ozark, Ala. | 1000d |
| KPRB Fairbanks, Alaska | 10000 |
| KHOZ Harrison, Ark. | 1000d |
| KBIF Fresno, Calif. | 1000d |
| KGRB West Covina, Calif. | 250d |
| WJWL Georgetown, Del. | 1000d |
| WSWN Belle Glade, Fla. | 1000d |
| WMOP Ocala, Fla. | 1000d |
| WCGA Calhoun, Ga. | 1000d |
| WCRY Macon, Ga. | 250d |
| WEAS Savannah, Ga. | 5000d |
| KTEE Idaho Falls, Ida. | 1000d |
| KSIR Wichita, Kan. | 250d |
| WKYW Louisville, Ky. | 1000d |
| WLSI Pikeville, Ky. | 5000d |
| KREH Oakdale, La. | 250d |
| WCME Brunswick, Maine | 1000d |
| WATC Gaylord, Mich. | 1000d |
| KTIS Minneapolis, Minn. | 1000d |
| WDDT Greenville, Miss. | 1000d |
| KFAL Fulton, Mo. | 1000d |
| KJSK Columbus, Nebr. | 1000d |
| WOTW Nashau, N.H. | 1000d |
| WBRV Boonville, N.Y. | 1000d |
| WSPN Saratoga Sprgs., N.Y. | 250d |
| WAYN Rockingham, N.C. | 1000d |
| WIAM Williamston, N.C. | 1000d |
| KFNW Fargo, N.Dak. | 1000d |
| WCNS Canton, Ohio | 500d |
| WFRO Fremont, Ohio | 500d |
| WCPA Clearfield, Pa. | 1000d |
| WFLN Philadelphia, Pa. | 1000d |
| WKXV Knoxville, Tenn. | 1000d |
| WCOR Lebanon, Tenn. | 500d |
| KALT Atlanta, Tex. | 1000d |

| Kc. | Wave Length | W.P. |
|---|---|---|
| KMCO | Conroe, Tex. | 500d |
| KFLD | Floydada, Tex. | 250d |
| KCLW | Hamilton, Tex. | 250d |
| WODY | Bassett, Va. | 500d |
| WAFC | Staunton, Va. | 1000d |
| KUEN | Wenatchee, Wash. | 1000d |
| WATK | Antigo, Wis. | 250d |

## 910—329.5

| | | |
|---|---|---|
| CJDV | Drumheller, Alta. | 5000 |
| CKLY | Lindsay, Ont. | 1000 |
| CBO | Ottawa, Ont. | 5000 |
| CFJC | Kamloops, B.C. | 10000 |
| CHRL | Roberval, Que. | 1000 |
| WDVC | Dadeville, Ala. | 500d |
| KPHO | Phoenix, Ariz. | 5000 |
| KLCN | Blytheville, Ark. | 5000d |
| KAMD | Camden, Ark. | 1000 |
| KDEO | El Cajon, Calif. | 1000 |
| KEWB | Oakland, Calif. | 5000 |
| KOXR | Oxnard, Calif. | 1000d |
| KPOF | nr. Denver, Colo. | 5000 |
| WHAY | New Britain, Conn. | 5000 |
| WPLA | Plant City, Fla. | 1000d |
| WGAF | Valdosta, Ga. | 5000 |
| KBGN | Caldwell, Ida. | 1000d |
| WAKO | Lawrenceville, Ill. | 500d |
| WSUI | Iowa City, Iowa | 5000 |
| WLCS | Baton Rouge, La. | 1000 |
| WABI | Bangor, Maine | 5000 |
| WFDF | Flint, Mich. | 5000 |
| WCOC | Meridian, Miss. | 5000 |
| KOYN | Billings, Mont. | 1000d |
| KYSS | Missoula, Mont. | 1000d |
| KBIM | Roswell, N.Mex. | 5000d |
| WLAS | Jacksonville, N.C. | 5000d |
| KCJB | Minot, N.Dak. | 1000 |
| WPFB | Middletown, Ohio | 1000 |
| KGLC | Miami, Okla. | 1000 |
| KURY | Brookings, Oreg. | 1000d |
| WAVL | Apollo, Pa. | 1000d |
| WGBI | Scranton, Pa. | 1000 |
| WSBA | York, Pa. | 5000 |
| WPRP | Ponce, P.R. | 5000 |
| WNCG | North Charleston, S.C. | 500d |
| WORD | Spartanburg, S.C. | 5000d |
| WJCW | Johnson City, Tenn. | 5000 |
| WEPG | S. Pittsburgh, Tenn. | 500d |
| KNAF | Fredericksburg, Tex. | 1000d |
| KRIO | McAllen, Tex. | 5000 |
| KRRV | Sherman, Tex. | 1000 |
| KALL | Salt Lake City, Utah | 5000 |
| WWRJ | White River Junction, Vermont | 1000d |
| WRNL | Richmond, Va. | 5000 |
| WHYE | Roanoke, Va. | 1000d |
| KORD | Pasco, Wash. | 1000d |
| KUDY | Seattle, Wash. | 1000 |
| KISN | Vancouver, Wash. | 1000 |
| WHSM | Hayward, Wis. | 5000d |
| WDOR | Sturgeon Bay, Wis. | 1000d |

## 920—325.9

| | | |
|---|---|---|
| CJCH | Halifax, N.S. | 10000 |
| CJCJ | Woodstock, N.B. | 1000 |
| CKCY | Sault St. Marie, Ont. | 10000 |
| CKNX | Wingham, Ont. | 2500 |
| WCTA | Adalusia, Ala. | 5000 |
| WWWR | Russellville, Ala. | 1000d |
| KARK | Little Rock, Ark. | 5000 |
| KOES | Palm Springs, Calif. | 1000d |
| KVEC | San Luis Obispo, Cal. | 1000 |
| KREX | Grd. Junction, Colo. | 5000 |
| KLMR | Lamar, Colo. | 1000 |
| WMEG | Eau Gallie, Fla. | 1000d |
| WGST | Atlanta, Ga. | 5000 |
| KAHU | Waiphau, Hawaii | 1000 |
| WGNU | Granite City, Ill. | 500d |
| WMOK | Metropolis, Ill. | 1000d |
| WBAA | W. Lafayette, Ind. | 5000 |
| KFNF | Shenandoah, Iowa | 1000 |
| WTCW | Whitesburg, Ky. | 1000d |
| WBOX | Bogalusa, La. | 1000d |
| KTOC | Jonesboro, La. | 1000d |
| WPTX | Lexington Pk., Md. | 500d |
| WMPL | Hancock, Mich. | 1000d |
| KDHL | Faribault, Minn. | 1000 |
| KWAD | Wadena, Minn. | 1000 |
| KRAM | Las Vegas, Nev. | 1000 |
| KOLO | Reno, Nev. | 1000 |
| KQEO | Albuquerque, N.Mex. | 1000 |
| WTTM | Trenton, N.J. | 1000 |
| WKRT | Cortland, N.Y. | 1000 |
| WGHQ | Kingston, N.Y. | 5000d |
| WIRD | Lake Placid, N.Y. | 1000 |
| WBBB | Burlington, N.C. | 5000d |
| WMNI | Columbus, Ohio | 500 |
| KGAL | Lebanon, Oreg. | 1000 |
| WKVA | Lewistown, Pa. | 1000 |
| WJAR | Providence, R.I. | 5000 |
| WTND | Orangeburg, S.C. | 1000d |
| KEZU | Rapid City, S.Dak. | 1000d |
| WLIV | Livingston, Tenn. | 1000d |
| KELP | El Paso, Tex. | 1000 |
| KECK | Odessa, Tex. | 1000 |
| KTLW | Texas City, Tex. | 1000d |
| KITN | Olympia, Wash. | 1000d |
| KXLY | Spokane, Wash. | 5000 |
| WMMN | Fairmont, W.Va. | 5000 |
| WOKY | Milwaukee, Wis. | 1000 |

## 930—322.4

| | | |
|---|---|---|
| CFBC | Saint John, N.B. | 10000 |
| CJCA | Edmonton, Alta. | 10000 |
| CJON | St. John's, N.F. | 10000 |
| WETO | Gadsden, Ala. | 1000d |
| KTKN | Ketchikan, Alaska | 1000 |
| KAPR | Douglas, Ariz. | 1000d |
| KFGT | Flagstaff, Ariz. | 1000 |
| KHJ | Los Angeles, Calif. | 5000 |
| KMET | Paradise, Calif. | 500d |
| KIUP | Durango, Colo. | 5000 |
| WKSB | Milford, Del. | 500d |
| WHAN | Haines City, Fla. | 1000 |
| WJAX | Jacksonville, Fla. | 5000 |
| WKXY | Sarasota, Fla. | 1000 |
| WMGR | Bainbridge, Ga. | 5000 |
| WGTA | Summerville, Ga. | 5000 |
| KSEI | Pocatello, Idaho | 5000 |
| WTAD | Quincy, Ill. | 5000 |
| WKCT | Bowling Green, Ky. | 1000 |
| WFMD | Frederick, Md. | 5000 |
| WREB | Holyoke, Mass. | 500d |
| WBCK | Battle Creek, Mich. | 5000 |
| KKIN | Aitkin, Minn. | 1000d |
| WSLI | Jackson, Miss. | 5000 |
| KWOC | Poplar Bluff, Mo. | 1000 |
| KOFI | Kalispell, Mont. | 5000d |
| KOGA | Ogallala, Nebr. | 500d |
| WWNH | Rochester, N.H. | 5000d |
| WPAT | Paterson, N.J. | 5000 |
| WBEN | Buffalo, N.Y. | 5000 |
| WIZR | Johnstown, N.Y. | 1000d |
| WSOC | Charlotte, N.C. | 5000 |
| WITN | Washington, N.C. | 5000 |
| WEOL | Elyria, Ohio | 1000 |
| WKY | Oklahoma City, Okla. | 5000 |
| KAGI | Grants Pass, Oreg. | 5000 |
| WCNR | Bloomsburg, Pa. | 1000d |
| KSDN | Aberdeen, S.D. | 1000 |
| WSEV | Sevierville, Tenn. | 5000d |
| KDET | Center, Tex. | 1000d |
| KITE | San Antonio, Tex. | 5000 |
| KENY | Bellingham, Ferndale Wash. | 1000d |
| WSAZ | Huntington, W.Va. | 5000 |
| KROE | Sheridan, Wyo. | 1000d |
| WLBL | Auburndale, Wis. | 5000d |

## 940—319.0

| | | |
|---|---|---|
| CBM | Montreal, Que. | 50000 |
| CJGX | Yorkton, Sask. | 10000 |
| CJIB | Vernon, B.C. | 1000 |
| KOBY | Tucson, Ariz. | 250 |
| KFRE | Fresno, Calif. | 50000 |
| WINZ | Miami, Fla. | 50000 |
| WMAZ | Macon, Ga. | 50000 |
| WMIX | Mt. Vernon, Ill. | 5000d |
| KIOA | Des Moines, Iowa | 10000 |
| WYLD | New Orleans, La. | 1000 |
| WMEW | Baltimore, Md. | 1000d |
| WJOR | South Haven, Mich. | 1000d |
| KSWM | Aurora, Mo. | 500d |
| KVSH | Valentine, Nebr. | 5000d |
| WFNC | Fayetteville, N.C. | 10000 |
| KGRL | Bend, Oreg. | 1000d |
| WESA | Charleroi, Pa. | 250d |
| WGRP | Greenville, Pa. | 1000d |
| WIPR | San Juan, P.R. | 10000 |
| KIXZ | Amarillo, Tex. | 5000 |
| KTON | Belton, Tex. | 1000d |
| KATQ | Texarkana, Tex. | 1000d |

## 950—315.6

| | | |
|---|---|---|
| CKNB | Campbellton, N.B. | 1000 |
| CKBB | Barrie, Ont. | 10000 |
| WRMA | Montgomery, Ala. | 1000d |
| KXJK | Forrest City, Ark. | 5000d |
| KFSA | Ft. Smith, Ark. | 1000 |
| KAHI | Auburn, Calif. | 1000d |
| KIMN | Denver, Colo. | 5000 |
| WNUE | Ft. Walton Sch., Fla. | 1000d |
| WLOF | Orlando, Fla. | 5000 |
| WGTA | Summerville, Ga. | 5000d |
| WGOV | Valdosta, Ga. | 5000 |
| KBOI | Boise, Idaho | 5000 |
| KLER | Orofino, Idaho | 1000d |
| WAAF | Chicago, Ill. | 1000d |
| WXLW | Indianapolis, Ind. | 5000d |
| KOEL | Oelwein, Iowa | 1000 |
| KJRG | Newton, Kans. | 500d |
| WBVL | Barbourville, Ky. | 1000d |
| WAGM | Presque Isle, Maine | 5000 |
| WORL | Boston, Mass. | 5000d |
| WWJ | Detroit, Mich. | 5000 |
| KRSI | St. Louis Park, Minn. | 1000d |
| WBKH | Hattiesburg, Miss. | 5000d |
| KLIK | Jefferson City, Mo. | 5000d |
| KLHS | Lordsburg, N. Mex. | 1000d |
| WBBF | Rochester, N.Y. | 1000 |
| WIBX | Utica, N.Y. | 5000 |
| WPET | Greensboro, N.C. | 5000d |
| KYES | Roseburg, Oreg. | 1000d |
| WNCC | Barnesboro, Pa. | 500d |
| WPEN | Philadelphia, Pa. | 5000 |
| WSPA | Spartanburg, S.C. | 5000 |
| KWAT | Watertown, S.Oak. | 1000 |
| WAGG | Franklin, Tenn. | 1000d |
| KDSX | Denison, Tex. | 500 |
| KPRC | Houston, Tex. | 50000 |
| KSEL | Lubbock, Tex. | 5000 |
| WXGI | Richmond, Va. | 5000d |
| KJR | Seattle, Wash. | 5000 |
| WERL | Eagle River, Wis. | 1000d |
| WKAZ | Charleston, W.Va. | 5000 |
| WKTS | Sheboygan, Wis. | 500d |

## 960—312.3

| | | |
|---|---|---|
| CFAC | Calgary, Alta. | 10000 |
| CHNS | Halifax, N.S. | 10000 |
| CKWS | Kingston, Ont. | 5000 |
| WBRC | Birmingham, Ala. | 5000 |
| WMOZ | Mobile, Ala. | 1000 |
| WCVQ | Kodiak, Alaska | 250 |
| KOOL | Phoenix, Ariz. | 5000 |
| KAVR | Apple Valley, Calif. | 5000d |
| KNEZ | Lompoc, Calif. | 500d |
| KABL | Oakland, Calif. | 1000 |
| WELI | New Haven, Conn. | 5000 |
| WGRO | Lake City, Fla. | 500d |
| WJCM | Sebring, Fla. | 1000d |
| WJAZ | Albany, Ga. | 5000d |
| WRFC | Athens, Ga. | 5000 |
| KSRA | Salmon, Idaho | 1000d |
| WDLM | E. Moline, Ill. | 1000d |
| WSBT | South Bend, Ind. | 5000 |
| KMA | Shenandoah, Iowa | 5000 |
| WPRT | Prestonsburg, Ky. | 5000d |
| KROF | Abbeville, La. | 1000d |
| WBOC | Salisbury, Md. | 5000 |
| WFGM | Fitchburg, Mass. | 1000 |
| WHAK | Rogers City, Mich. | 5000d |
| KLTF | Little Falls, Minn. | 500d |
| WABG | Greenwood, Miss. | 1000 |
| KFVS | Cape Girardeau, Mo. | 5000 |
| KNEB | Scottsbluff, Nebr. | 1000 |
| KWYK | Farmington, N.Mex. | 1000d |
| WEAV | Plattsburg, N.Y. | 5000 |
| WAAK | Dallas, N.C. | 1000d |
| WFTC | Kinston, N.C. | 5000 |
| WWST | Wooster, Ohio | 1000d |
| KGWA | Enid, Okla. | 1000 |
| KLAD | Klamath Falls, Oreg. | 5000d |
| WHYL | Carlisle, Pa. | 5000d |
| WADP | Kane, Pa. | 1000d |
| WATS | Sayre, Pa. | 1000d |
| WBEU | Beaufort, S.C. | 1000d |
| WBMC | McMinnville, Tenn. | 500d |
| KIMP | Mt. Pleasant, Tex. | 1000d |
| KGKL | San Angelo, Tex. | 5000 |
| KOVO | Provo, Utah | 5000 |
| WDBJ | Roanoke, Va. | 5000 |
| KALE | Richland, Wash. | 1000 |
| WTCH | Shawano, Wis. | 1000 |

## 970—309.1

| | | |
|---|---|---|
| CKCH | Hull, Que. | 5000 |
| WERH | Hamilton, Ala. | 5000d |
| WTBF | Troy, Ala. | 5000 |
| KNEA | Jonesboro, Ark. | 1000d |
| KBIS | Bakersfield, Calif. | 1000 |
| KCHV | Coachella, Calif. | 5000 |
| KBEE | Modesto, Calif. | 1000 |
| KFEL | Pueblo, Colo. | 1000d |
| WFLA | Tampa, Fla. | 5000 |
| WIIN | Atlanta, Ga. | 5000d |
| WVOP | Vidalia, Ga. | 5000d |
| KHBC | Hilo, Hawaii | 1000 |
| KAYT | Rupert, Idaho | 1000d |
| WMAY | Springfield, Ill. | 1000 |
| WAVE | Louisville, Ky. | 5000 |
| KSYL | Alexandria, La. | 1000 |
| WCSH | Portland, Maine | 5000 |
| WAMD | Aberdeen, Md. | 500 |
| WESO | Southbridge, Mass. | 1000d |
| WJAN | Ishpeming, Mich. | 5000d |
| WKHM | Jackson, Mich. | 1000 |
| KQAQ | Austin, Minn. | 5000d |
| KOOK | Billings, Mont. | 5000 |
| KJLT | No. Platte, Nebr. | 5000d |
| KVEG | Las Vegas, Nev. | 500d |
| WJRZ | Newark, N.J. | 5000 |
| WEBR | Buffalo, N.Y. | 5000 |
| WCHN | Norwich, N.Y. | 500d |
| WRCS | Ahoskie, N.C. | 1000d |
| WWIT | Canton, N.C. | 1000d |
| WDAY | Fargo, N.Dak. | 5000 |
| WREO | Ashtabula, Ohio | 5000 |
| WATH | Athens, Ohio | 1000d |
| KAKC | Tulsa, Okla. | 1000 |
| KOIN | Portland, Oreg. | 5000 |
| WWSW | Pittsburgh, Pa. | 5000 |
| WJMX | Florence, S.C. | 5000 |
| KASE | Austin, Tex. | 1000d |
| KNOK | Ft. Worth, Tex. | 1000d |
| WIVI | Christiansted, V.I. | 1000 |
| WYPR | Danville, Va. | 1000d |
| WRWV | Waynesboro, Va. | 500d |
| KREM | Spokane, Wash. | 5000 |
| WWYO | Pineville, W.Va. | 1000d |
| WHA | Madison, Wis. | 5000d |
| WIGL | Superior, Wis. | 500d |

## 980—305.9

| | | |
|---|---|---|
| CKNW | New Westminster, Brit. Columbia | 10000 |
| CFPL | London, Ont. | 10000 |
| CKGM | Montreal, Que. | 10000 |
| CBV | Quebec, Que. | 5000 |
| CHEX | Peterboro, Ont. | 5000 |
| CKRM | Regina, Sask. | 10000 |
| WKLF | Clanton, Ala. | 1000d |
| WXLL | Big Delta, Alaska | 100 |
| KINS | Eureka, Calif. | 5000 |
| KEAP | Fresno, Calif. | 500d |
| KFWB | Los Angeles, Calif. | 5000 |
| KGLN | GlenwoodSprgs., Colo. | 1000d |
| WSUB | Groton, Conn. | 1000d |
| WRC | Washington, D.C. | 5000 |
| WDVH | Gainesville, Fla. | 5000d |
| WTOT | Marianna, Fla. | 1000d |
| WBOP | Pensacola, Fla. | 1000d |
| WLOO | Pompano Beach, Fla. | 1000d |
| WKLY | Hartwell, Ga. | 1000d |
| WPGA | Perry, Ga. | 500d |
| WRIP | Rossville, Ga. | 500d |
| KUPI | Idaho Falls, Idaho | 1000d |
| KSGM | Chester, Ill. | 500 |
| WITY | Danville, Ill. | 1000 |
| KOKA | Shreveport, La. | 5000d |
| WCAP | Lowell, Mass. | 1000d |
| WDMC | Otsego, Mich. | 500 |
| WPBC | Minneapolis, Minn. | 1000d |
| WAPF | McComb, Miss. | 1000d |
| KMBC | Kansas City, Mo. | 5000 |
| KLYQ | Hamilton, Mont. | 1000d |
| KVLV | Fallon, Nev. | 5000d |
| KVER | Clovis, N.Mex. | 1000 |
| KMIN | Grants, N. Mex. | 1000d |
| WTRY | Troy, N.Y. | 5000 |
| WKLM | Wilmington, N.C. | 5000d |
| WAAA | Win.-Salem, N.C. | 1000d |
| WONE | Dayton, Ohio | 5000 |
| WILK | Wilkes-Barre, Pa. | 5000 |
| WRBI | Winnsboro, S.C. | 500d |
| KDSJ | Deadwood, S.Dak. | 1000 |
| WSIX | Nashville, Tenn. | 5000 |
| KFRD | Rosenberg, Tex. | 1000d |
| KSVC | Richfield, Utah | 5000 |
| WFHG | Bristol, Va. | 5000 |
| WMEK | Chase City, Va. | 500d |
| KUTI | Yakima, Wash. | 5000d |
| WHAW | Weston, W.Va. | 1000d |
| WCUB | Manitowoc, Wis. | 1000d |
| WPRE | Prairie du Chien, Wis. | 1000 |

## 990—302.8

| | | |
|---|---|---|
| CBW | Winnipeg, Man. | 50000 |
| CBY | Corner Brook, Nfld. | 1000 |
| WEIS | Center, Ala. | 250 |
| WWWF | Fayette, Ala. | 1000d |
| WTCB | Flomaton, Ala. | 500d |
| KTKT | Tucson, Ariz. | 10000 |
| KKIS | Pittsburg, Calif. | 5000 |
| KGUO | Santa Barbara, Calif. | 1000d |
| KLIR | Oenver, Colo. | 1000d |
| WBZY | Torrington, Conn. | 1000d |
| WFAB | Miami, Fla. | 5000 |
| WHOO | Orlando, Fla. | 10000 |
| WDWD | Dawson, Ga. | 1000d |
| WGML | Hinesville, Ga. | 250d |
| KTRG | Honolulu, Hawaii | 5000 |
| WCAZ | Carthage, Ill. | 1000d |
| WITZ | Jasper, Ind. | 1000d |
| KAYL | Storm Lake, Iowa | 250d |
| KRSL | Russell, Kans. | 250d |
| WJMR | New Orleans, La. | 250d |
| KRIH | Rayville, La. | 250d |
| WCRM | Clare, Mich. | 250d |
| WABO | Waynesboro, Miss. | 250d |
| KRMO | Monett, Mo. | 250d |
| KSVP | Artesia, N.Mex. | 1000 |
| WEEB | Southern Pines, N.C. | 5000d |
| WJEH | Gallipolis, Ohio | 1000d |
| WTIG | Massillon, Ohio | 250d |
| KABY | Albany, Oreg. | 250d |
| WIBG | Philadelphia, Pa. | 50000 |
| WVSC | Somerset, Pa. | 250d |
| WPRA | Mayaguez, P.R. | 10000 |
| WLKW | Providence, R.I. | 50000 |
| WAKN | Aiken, S.C. | 1000d |
| WNOX | Knoxville, Tenn. | 10000 |
| KWAM | Memphis, Tenn. | 1000d |
| KTRM | Beaumont, Tex. | 1000 |
| KAML | Kenedy, Tex. | 250d |
| KNIN | Wichita Falls, Tex. | 10000 |
| KDYL | Tooele, Utah | 1000d |
| WNRV | Narrows, Va. | 1000d |
| WANT | Richmond, Va. | 1000d |
| WKLJ | Sparta, Wis. | 250 |

## 1000—299.8

| | | |
|---|---|---|
| CKBW | Bridgewater, N.S. | 10000 |
| WCFL | Chicago, Ill. | 50000 |
| KTOK | Okla. City, Okla. | 5000 |
| KSTA | Coleman, Tex. | 250d |
| KGRI | Henderson, Tex. | 250d |
| WHWB | Rutland, Vt. | 1000d |
| WBNB | Charlotte Amalie, Virgin Islands | 1000 |
| KOMO | Seattle, Wash. | 50000 |

## 1010—296.9

| | | |
|---|---|---|
| CBX | Calgary, Alta. | 50000d |
| CFRB | Toronto, Ont. | 50000 |
| KCAC | Phoenix, Ariz. | 500d |
| KVNC | Winslow, Ariz. | 1000 |
| KLRA | Little Rock, Ark. | 10000 |
| KCHJ | Delano, Calif. | 5000 |
| KCMJ | Palm Sprgs., Calif. | 1000 |
| KSAY | San Fran., Calif. | 10000d |
| WCNU | Crestview, Fla. | 1000d |
| WZRO | Jacksonville Beach, Florida | 2500d |
| WINQ | Tampa, Fla. | 50000d |
| WGUN | Decatur, Ga. | 50000d |
| KATN | Boise, Idaho | 1000d |
| WCSI | Columbus, Ind. | 500d |
| KSMN | Mason City, Iowa | 1000d |
| KIND | Independence, Kans. | 250d |
| KDLA | DeRidder, La. | 1000d |
| WSID | Baltimore, Md. | 1000d |
| WMRT | Lansing, Mich. | 500d |
| WMOX | Meridian, Miss. | 10000 |
| KCHI | Chillicothe, Mo. | 250d |
| KXEN | Festus, Mo. | 50000d |
| KRVN | Lexington, Nebr. | 25000d |
| WCNL | Newport, N.H. | 250d |
| WINS | New York, N.Y. | 50000 |
| WABZ | Albermarle, N.C. | 1000d |
| WELS | Kinston, N.C. | 1000d |
| WIOI | New Boston, Ohio | 1000d |
| KBEV | Portland, Oreg. | 1000d |

| Kc. Wave Length | W.P. |
|---|---|
| WITT Lewisburg, Pa. | 250d |
| WHIN Gallatin, Tenn. | 1000d |
| WORM Savannah, Tenn. | 250d |
| KBUY Amarillo, Tex. | 5000 |
| KODA Houston, Tex. | 1000d |
| KAWA Marlin, Tex. | 1000d |
| WELK Charlottesville, Va | 1000d |
| WMEV Marion, Va. | 1000d |
| WPMH Portsmouth, Va. | 5000d |
| WCST Berkeley Sprgs., W.Va. | 250d |
| WSPT, Stevens Pt., Wis. | 1000d |

## 1020—293.9

| | |
|---|---|
| KGBS Los Angeles, Calif. | 50000 |
| WCIL Carbondale, Ill. | 1000d |
| WPEO Peoria, Ill. | 1000d |
| KDKA Pittsburgh, Pa. | 50000 |

## 1030—291.1

| | |
|---|---|
| WBZ Boston, Mass. | 50000 |
| WBZA Springfield, Mass. | 1000 |
| KCTA Corpus Christi, Tex. | 50000d |

## 1040—288.3

| | |
|---|---|
| KHVH Honolulu, Hawaii | 5000 |
| WHO Des Moines, Iowa | 50000 |
| KIXL Dallas, Tex. | 1000d |

## 1050—285.5

| | |
|---|---|
| CFGP Grande Prairie, Alta. | 10000 |
| CKSB St. Boniface, Man. | 10000 |
| CJIC Sault Ste. Marie, Ont. | 10000 |
| CHUM Toronto, Ont. | 5000 |
| WRFS Alexander City, Ala. | 1000d |
| WCRI Scottsboro, Ala. | 250d |
| KVWM Show Low, Ariz. | 250d |
| KVLC Little Rock, Ark. | 1000d |
| KOFY San Mateo, Calif. | 1000d |
| KWSO Wasco, Calif. | 1000d |
| KLMO Longmont, Colo. | 250d |
| WJSB Crestview, Fla. | 1000d |
| WIVY Jacksonville, Fla. | 1000d |
| WHBO Tampa, Fla. | 250d |
| WRMF Titusville, Fla. | 500d |
| WAUG Augusta, Ga. | 5000d |
| WBIE Marietta, Ga. | 500d |
| WMNZ Montezuma, Ga. | 250d |
| WDZ Decatur, Ill. | 1000d |
| KNCO Garden City, Kans. | 1000d |
| WNES Central City, Ky. | 500d |
| KLPL Lake Providence, La. | 250d |
| KCIJ Shreveport, La. | 250d |
| KVPI Villa Platte, La. | 250d |
| WQMR Silver Sprg., Md. | 1000d |
| WPAG Ann Arbor, Mich. | 1000d |
| KLOH Pipestone, Minn. | 1000d |
| WACR Columbus, Miss. | 1000d |
| KMIS Portageville, Mo. | 250d |
| KSIS Sedalia, Mo. | 1000d |
| KLVC Las Vegas, Nev. | 500d |
| WBNC Conway, N.H. | 1000d |
| WSEN Baldwinsville, N.Y. | 250d |
| WSTS Massena, N.Y. | 1000d |
| WHN New York, N.Y. | 50000 |
| WBTL Farmville, N.C. | 250d |
| WFSC Franklin, N.C. | 1000d |
| WLON Lincolnton, N.C. | 1000d |
| WWGP Sanford, N.C. | 1000d |
| KCCO Lawton, Okla. | 250d |
| KFMJ Tulsa, Okla. | 1000d |
| KUBE Pendleton, Oreg. | 1000d |
| KEED Springfield, Oreg. | 1000d |
| WBUT Butler, Pa. | 1000d |
| WLYC Williamsport, Pa. | 1000d |
| WSMT Sparta, Tenn. | 1000d |
| KLEN Killeen, Tex. | 250d |
| KWLD Liberty, Tex. | 250d |
| KPLA Plainview, Tex. | 1000d |
| KCAS Slaton, Tex. | 250d |
| WGAT Gate City, Va. | 250d |
| WBRG Lynchburg, Va. | 1000d |
| WCMS Norfolk, Va. | 1000d |
| KNBX Kirkland, Wash. | 1000d |
| WCEF Parkersburg, W.Va. | 1000d |
| WECL Eau Claire, Wis. | 1000d |
| WLIP Kenosha, Wis. | 250d |
| KWIV Douglas, Wyo. | 250d |

## 1060—282.8

| | |
|---|---|
| CFCN Calgary, Alta. | 10000 |
| CJLR Quebec, Que. | 10000 |
| KUPD Tempe, Ariz. | 500 |
| KPAY Chico, Calif. | 10000 |
| WNOE New Orleans, La. | 50000 |
| WHFB Benton Harbor, Mich. | 1000d |
| WMAP Monroe, N.C. | 250d |
| WHOF Canton, Ohio | 1000d |
| WRCV Philadelphia, Pa | 50000 |

## 1070—280.2

| | |
|---|---|
| CBA Sackville, N.B. | 50000 |
| CHOK Sarnia, Ont. | 5000 |
| WAPI Birmingham, Ala. | 50000 |
| KNX Los Angeles, Calif. | 50000 |
| WVCG Coral Gables, Fla. | 1000d |
| WIBC Indianapolis, Ind. | 50000 |
| KIRL Wichita, Kans. | 10000 |
| KHMO Hannibal, Mo. | 5000 |
| WHPE High Point, N.C. | 1000d |
| WMIA Arecibo, P.R. | 500 |

| Kc. Wave Length | W.P. |
|---|---|
| WFLI Lookout Mtn., Tenn. | 10000 |
| WDIA Memphis, Tenn. | 50000 |
| KOPY Alice, Tex. | 1000 |
| WKOW Madison, Wis. | 10000 |

## 1080—277.6

| | |
|---|---|
| CHED Edmonton, Alta. | 10000 |
| KSCO Santa Cruz, Calif. | 10000 |
| WTIC Hartford, Conn. | 50000 |
| WKLO Louisville, Ky. | 5000 |
| WOAP Owosso, Mich. | 250d |
| WUFO Amherst, N.Y. | 1000 |
| WEWO Laurinburg, N.C. | 1000d |
| KWJJ Portland, Oreg. | 10000 |
| WYRE Pittsburgh, Pa. | 1000d |
| KRLD Dallas, Tex. | 50000 |

## 1090—275.1

| | |
|---|---|
| CHEC Lethbridge, Alta. | 5000 |
| CHIC Brampton, Ont. | 250 |
| CHRS St. Jean, Que. | 1000 |
| KTHS Little Rock, Ark. | 50000 |
| WCRA Effingham, Ill. | 250d |
| KHAI Honolulu, Hawaii | 5000 |
| KNWS Waterloo, Iowa | 1000d |
| WBAL Baltimore, Md. | 50000 |
| WILD Boston, Mass. | 1000d |
| WMUS Muskegon, Mich. | 1000d |
| WAJS San German P.R. | 250 |
| KING Seattle, Wash. | 50000 |

## 1100—272.6

| | |
|---|---|
| KFAX San Francisco, Calif. | 50000 |
| WLBB Carrollton, Ga. | 250d |
| WHLI Hempstead, N.Y. | 10000d |
| KYW Cleveland, Ohio | 50000 |
| WGPA Bethlehem, Pa. | 250d |

## 1110—270.1

| | |
|---|---|
| CFML Cornwall, Ont. | 1000 |
| CFTJ Galt, Ont. | 250 |
| WALT Tampa, Fla. | 50000d |
| KIPA Hilo, Hawaii | 1000 |
| WMBI Chicago, Ill. | 5000d |
| KFAB Omaha, Nebr. | 50000 |
| WBT Charlotte, N.C. | 50000 |
| KBND Bend, Oreg. | 5000 |
| WNAR Norristown, Pa. | 500d |
| WVJP Caguas, P.R. | 250 |
| WHIM Providence, R.I. | 1000d |

## 1120—267.7

| | |
|---|---|
| WUST Bethesda, Md. | 250d |
| KMOX St. Louis, Mo. | 50000 |
| WWOL Buffalo, N.Y. | 1000d |
| KCLE Cleburne, Tex. | 250d |

## 1130—265.3

| | |
|---|---|
| CKWX Vancouver, B.C. | 50000 |
| KROU, Dinuba, Calif. | 1000 |
| KSDO San Diego, Calif. | 5000 |
| KLEI Kailua, Hawaii | 1000 |
| KWKH Shreveport, La. | 50000 |
| WCAR Detroit, Mich. | 50000 |
| WDGY Minneapolis, Minn. | 50000 |
| WNEW New York, N.Y. | 50000 |

## 1140—263.0

| | |
|---|---|
| CFTK Terrace, B.C. | 1000 |
| CKXL Calgary, Alta. | 10000 |
| CBI Sydney, N.S. | 5000 |
| KRAK Sacramento, Calif. | 50000 |
| WMIE Miami, Fla. | 10000 |
| KGEM Boise, Idaho | 10000 |
| WSIV Pekin, Ill. | 1000d |
| KLPR Oklahoma City, Okla. | 1000d |
| WITA San Juan, P.R. | 500 |
| KSOO Sioux Falls, S.Dak. | 10000 |
| KORC Mineral Wells, Tex. | 250d |
| WRVA Richmond, Va. | 50000 |

## 1150—260.7

| | |
|---|---|
| CKSA Lloydminister, Alta. | 10000 |
| CHSJ Saint John, N.B. | 10000 |
| CKOC Hamilton, Ont. | 10000 |
| CKX Brandon, Man. | 10000 |
| CKTR Three Rivers, Que. | 10000 |
| WBCA Bay Minette, Ala. | 1000d |
| WGEA Geneva, Ala. | 1000d |
| WJRD Tuscaloosa, Ala. | 5000 |
| KCKY Coolidge, Ariz. | 1000 |
| KXLR No. Little Rock, Ark. | 5000 |
| KFSG Los Angeles, Calif. | 2500 |
| KRKD Los Angeles, Calif. | 5000 |
| KJAX Santa Rosa, Calif. | 5000 |
| KGMC Englewood, Colo. | 1000d |
| WCNX Middletown, Conn. | 500d |
| WDEL Wilmington, Del. | 5000 |
| WNDB Daytona Bch., Fla. | 1000 |
| WTMP Tampa, Fla. | 5000d |
| WFPM Fort Valley, Ga. | 1000d |
| WJEM Valdosta, Ga. | 1000d |
| WGGH Marion, Ill. | 5000d |
| WJRL Rockford, Ill. | 500d |
| KWKY Des Moines, Iowa | 1000 |
| KSAL Salina, Kans. | 5000 |
| WMST Mt. Sterling, Ky. | 500d |
| WLOC Mumfordville, Ky. | 1000d |
| WJBO Baton Rouge, La. | 5000 |
| WGHM Skowhegan, Maine | 5000d |
| WHMC Gaithersburg, Md. | 1000 |
| WCOP Boston, Mass. | 5000 |
| WCEN Mt. Pleasant, Mich. | 1000 |
| KASM Albany, Minn. | 1000d |
| WXTN Lexington, Miss. | 500d |

| Kc. Wave Length | W.P. |
|---|---|
| KRMS Osage Beach, Mo. | 1000d |
| KSEN Shelby, Mont. | 1000 |
| KDEF Albuquerque, N.Mex. | 1000 |
| WRUN Utica, N.Y. | 5000 |
| WBAG Burlington, N.C. | 1000d |
| WGBR Goldsboro, N.C. | 5000 |
| WCUE Cuyahoga Falls, Ohio | 1000d |
| WIMA Lima, Ohio | 1000 |
| KNED McAlester, Okla. | 1000 |
| KAGO Klamath Falls, Oreg. | 5000 |
| WHUN Huntingdon, Pa. | 5000d |
| WYNS Lehighton, Pa. | 1000d |
| WKPA New Kensington, Pa. | 1000d |
| WORA Mayaguez, P.R. | 1000 |
| WDIX Orangeburg, S.C. | 5000 |
| WTYC Rock Hill, S.C. | 1000d |
| WSNW Seneca Township, South Carolina | 1000d |
| KIMM Rapid City, S.Dak. | 5000d |
| WAPO Chattanooga, Tenn. | 5000 |
| WCRK Morristown, Tenn. | 1000 |
| WTAW Bryan, Tex. | 1000d |
| KCCT Corpus Christi, Tex. | 1000d |
| KIZZ El Paso, Tex. | 1000d |
| KVIL Highland Park, Tex. | 1000d |
| KJBC Midland, Tex. | 1000d |
| KPNG Port Neches, Tex. | 500d |
| KOLJ Quanah, Tex. | 500d |
| KBER San Antonio, Tex. | 1000d |
| KOFE Pullman, Wash. | 1000d |
| KAYO Seattle, Wash. | 5000 |
| KKEY Vancouver, Wash. | 1000d |
| WABH Deerfield, Va. | 1000d |
| WELC Welch, W.Va. | 1000d |
| WAXX Chippewa Falls, Wis. | 5000d |
| WISN Milwaukee, Wis. | 5000 |

## 1160—258.5

| | |
|---|---|
| WJJD Chicago, Ill. | 50000 |
| KSL Salt Lake City, Utah | 50000 |

## 1170—256.3

| | |
|---|---|
| CFNS Saskatoon, Sask. | 1000 |
| WCOV Montgomery, Ala. | 10000 |
| KCBQ San Diego, Calif | 50000 |
| KLOK San Jose, Calif. | 10000 |
| KOHO Honolulu, Hawaii | 1000 |
| WLBH Mattoon, Ill. | 250d |
| KSTT Davenport, Iowa | 1000 |
| KVOO Tulsa, Okla. | 50000 |
| WLEO Ponce, P.R. | 250 |
| KPUG Bellingham, Wash. | 1000 |
| WWVA Wheeling, W.Va. | 50000 |

## 1180—254.1

| | |
|---|---|
| WLDS Jacksonville, Ill. | 1000d |
| WHAM Rochester, N.Y. | 50000 |

## 1190—252.0

| | |
|---|---|
| KZON Tolleson, Ariz. | 250 |
| KEZY Anaheim, Calif. | 1000 |
| KNBA Vallejo, Calif. | 250d |
| WOWO Ft. Wayne, Ind. | 50000 |
| WANN Annapolis, Md. | 10000d |
| WKOX Fram'gham, Mass. | 1000d |
| WLIB New York, N.Y. | 1000d |
| KEX Portland, Oreg. | 50000 |
| KLIF Dallas, Tex. | 50000 |

## 1200—249.9

| | |
|---|---|
| WOAI San Antonio, Tex. | 50000 |

## 1210—247.8

| | |
|---|---|
| WCNT Centralia, Ill. | 1000d |
| WKNX Saginaw, Mich. | 10000d |
| WADE Wadesboro, N.C. | 1000d |
| WAVI Dayton, Ohio | 250d |
| WCAU Philadelphia, Pa. | 50000 |

## 1220—245.8

| | |
|---|---|
| CJOC Lethbridge, Alta. | 10000 |
| CKDA Victoria, B.C. | 10000 |
| CJRL Kenora, Ont. | 1000 |
| CKCW Moncton, N.B. | 10000 |
| CJSS Cornwall, Ont. | 10000 |
| CKSM Shawinigan, Quebec | 1000 |
| WEZB Birmingham, Ala. | 1000d |
| WPRN Butler, Ala. | 1000d |
| WABF Fairhope, Ala. | 1000 |
| KVSA McGehee, Ark. | 1000d |
| KLIP Fowler, Calif. | 250d |
| KIBE Palo Alto, Calif. | 1000d |
| KKAR Pomona, Calif. | 250d |
| KFSC Denver, Colo. | 1000d |
| WDEE Hamden, Conn. | 1000d |
| WQTY Arlington, Fla. | 1000d |
| WKBX Kissimmee, Fla. | 1000d |
| WMET Miami, Fla. | 250d |
| WSAF Sarasota, Fla. | 1000d |
| WCLB Camilla, Ga. | 1000d |
| WPLK Rockmart, Ga. | 500d |
| WSFT Thomaston, Ga. | 250d |
| WLPO LaSalle, Ill. | 1000d |
| WKRS Waukegan, Ill. | 1000d |
| WSLM Salem, Ind. | 1000d |
| KJAN Atlantic, Iowa | 250d |
| KOUR Independence, Iowa | 250d |
| KOFO Ottawa, Kans. | 250d |
| WFKN Franklin, Ky. | 250d |
| KBCL Shreveport, La. | 250d |
| WLBI Denham Springs, La. | 250d |
| WSME Sanford, Maine | 1000d |
| WBCH Hastings, Mich. | 250d |
| WAVN Stillwater, Minn. | 1000d |
| WMDC Hazlehurst, Miss. | 250d |
| KBHM Branson, Mo. | 1000d |

| Kc. Wave Length | W.P. |
|---|---|
| KLPW Union, Mo. | 1000d |
| WKBK Keene, N.H. | 1000d |
| WGNY Newburgh, N.Y. | 5000d |
| WSOQ N. Syracuse, N.Y. | 1000d |
| WKMT Kings Mtn., N.C. | 1000d |
| WREV Reidsville, N.C. | 1000d |
| WENC Whiteville, N.C. | 1000d |
| KEYO Oakes, N.Dak. | 1000d |
| WGAR Cleveland, Ohio | 50000 |
| WERT Van Wert, Ohio | 250d |
| KGYN Guymon, Okla. | 1000d |
| KBLY Goldbeach, Oreg. | 1000d |
| KAPT Salem, Ore. | 1000 |
| WJUN Mexico, Pa. | 1000d |
| WRIB Providence, R.I. | 1000d |
| WALD Walterboro, S.C. | 1000d |
| WFWL Camden, Tenn. | 250d |
| WCPH Etowah, Tenn. | 1000d |
| WHEY Millington, Tenn. | 250d |
| KVLL Livingston, Tex. | 250d |
| KZEE Weatherford, Tex. | 250d |
| WLSD Big Stone Gap, Va. | 1000d |
| WFAX Falls Church, Va. | 5000d |
| KASY Auburn, Wash. | 250d |
| KOZI Chelan, Wash. | 1000d |
| WRNE Wis. Rapids, Wis. | 500d |

## 1230—243.8

| | |
|---|---|
| CFCW Camrose, Alta. | 10000 |
| CHFC Churchill, Man. | 250 |
| CFKL Schefferville, Que. | 250 |
| CFGR Gravelbourg, Sask. | 250 |
| CFHR Hay River, Nwt. | 100 |
| CFYT Dawson City, Yukon T. | 100 |
| CFPA Port Arthur, Ont. | 1000 |
| CKLD Thetford Mines, Que. | 250 |
| CKMP Midland, Ont. | 250 |
| VOAR St. John's, Nfld. | 100 |
| CKVD Val D'Or, Que. | 1000 |
| WAUD Auburn, Ala. | 1000 |
| WJBB Haleyville, Ala. | 1000 |
| WBHP Huntsville, Ala. | 1000 |
| WOLS Florence, Ala. | 1000 |
| WNUZ Talledega, Ala. | 250 |
| WTBC Tuscaloosa, Ala. | 250 |
| KIFW Sitka, Alaska | 250 |
| KSUN Bisbee, Ariz. | 250 |
| KAAA Kingman, Ariz. | 250 |
| KRIZ Phoenix, Ariz. | 250 |
| KATO Safford, Ariz. | 250 |
| KCON Conway, Ark. | 250 |
| KFPW Ft. Smith, Ark. | 1000 |
| KBTM Jonesboro, Ark. | 250 |
| KGEE Bakersfield, Calif. | 500 |
| KWTC Barstow, Calif. | 1000 |
| KIBS Bishop, Calif. | 1000 |
| KXO El Centro, Calif. | 250 |
| KDAC Ft. Bragg, Calif. | 250 |
| KGFJ Los Angeles, Calif. | 250 |
| KPRL Paso Robles, Calif. | 1000 |
| KROG Redding, Calif. | 250 |
| KWG Stockton, Calif. | 250 |
| KEXO Grand Junc., Colo. | 250 |
| KBRR Leadville, Colo. | 250 |
| KDZA Pueblo, Colo. | 250 |
| KGEK Sterling, Colo. | 250 |
| WINF Manchester, Conn. | 1000 |
| WGGG Gainesville, Fla. | 1000 |
| WONN Lakeland, Fla. | 250 |
| WMAF Madison, Fla. | 1000 |
| WSBB New Smyrna Bch., Florida | 1000 |
| WNVY Pensacola, Fla. | 250 |
| WCNH Quincy, Fla. | 1000 |
| WJNO W. Palm Beach, Fla. | 250 |
| WBIA Augusta, Ga. | 1000d |
| WBLJ Dalton, Ga. | 1000 |
| WXLI Dublin, Ga. | 250d |
| WFOM Marietta, Ga. | 1000 |
| WSOK Savannah, Ga. | 250 |
| WAYX Waycross, Ga. | 1000 |
| KBAR Burley, Idaho | 250 |
| KORT Grangeville, Idaho | 250 |
| KRXK Rexburg, Idaho | 1000 |
| WJBC Bloomington, Ill. | 1000 |
| WQUA Moline, Ill. | 1000 |
| WHCO Sparta, Ill. | 250 |
| WJOB Hammond, Ind. | 1000d |
| WSAL Logansport, Ind. | 1000 |
| WTCJ Tell City, Ind. | 250 |
| WBOW Terre Haute, Ind. | 1000d |
| KFJB Marshalltown, Iowa | 1000 |
| WHIR Danville, Ky. | 1000d |
| WHOP Hopkinsville, Ky. | 1000 |
| WMLF Pineville, Ky. | 1000d |
| KLIC Monroe, La. | 250 |
| WJBW New Orleans, La. | 1000 |
| KSLO Opelousas, La. | 250 |
| WQDY Calais, Maine | 250 |
| WITH Baltimore, Md. | 1000 |
| WCUM Cumberland, Md. | 1000 |
| WMNB No. Adams, Mass. | 250 |
| WESX Salem, Mass. | 1000 |
| WNEB Worcester, Mass. | 1000 |
| WJEF Grand Rapids, Mich. | 1000 |
| WIKB Iron River, Mich. | 1000 |
| WMPC Lapeer, Mich. | 250 |
| WSOO Slt. Ste. Marie, Mich. | 1000 |
| WSTR Sturgis, Mich. | 1000d |
| WKLK Cloquet, Minn. | 1000 |
| KGHS Internat'l Falls, Minn. | 100 |
| KYSM Mankato, Minn. | 250 |
| KMRS Morris, Minn. | 250 |
| KTRF Thief Riv. Flls., Minn. | 250 |
| KWNO Winona, Minn. | 1000 |
| WCMA Corinth, Miss. | 1000 |
| WHSY Hattiesburg, Miss. | 1000 |
| WSSO Starkville, Miss. | 250 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WAZF | Yazoo City, Miss. | 250 |
| KODE | Joplin, Mo. | 1000 |
| KLWT | Lebanon, Mo. | 250 |
| KNCM | Moberly, Mo. | 1000 |
| KANA | Anaconda, Mont. | 250 |
| KBMN | Bozeman, Mont. | 1000d |
| KXLO | Lewiston, Mont. | 1000 |
| KLCB | Libby, Mont. | 250 |
| KTNC | Falls City, Nebr. | 100 |
| KHAS | Hastings, Nebr. | 250 |
| KELY | Ely, Nev. | 250 |
| KLAS | Las Vegas, Nev. | 250 |
| KDOT | Reno, Nev. | 250 |
| WMOU | Berlin, N.H. | 250 |
| WTSV | Claremont, N.H. | 1000 |
| WCMC | Wildwood, N.J. | 100 |
| KALG | Alamogordo, N.Mex. | 250 |
| KOTS | Deming, N.Mex. | 250 |
| KYVA | Gallup, N.Mex. | 250 |
| KFUN | Las Vegas, N.Mex. | 250 |
| KRSY | Roswell, N.Mex. | 250 |
| WNIA | Cheektowaga, N.Y. | 500 |
| WENY | Elmira, N.Y. | 1000 |
| WHUC | Hudson, N.Y. | 250 |
| WLFH | Little Falls, N.Y. | 250 |
| WFAS | White Plains, N.Y. | 250 |
| WSKY | Asheville, N.C. | 1000 |
| WFAI | Fayetteville, N.C. | 1000d |
| WMFR | High Point, N.C. | 1000 |
| WISP | Kinston, N.C. | 1000d |
| WNNC | Newton, N.C. | 250 |
| WCBT | Roanoke Rap., N.C. | 250 |
| KDIX | Dickinson, N.Dak. | 250 |
| WCPO | Cincinnati, Ohio | 250 |
| WCOL | Columbus, Ohio | 250 |
| WIRO | Ironton, Ohio | 250 |
| WTOL | Toledo, Ohio | 1000d |
| KADA | N. of Ada, Okla. | 250 |
| WBBZ | Ponca City, Okla. | 250 |
| KIAL | Astoria, Oreg. | 250 |
| KRNS | Burns, Oreg. | 250 |
| KOOS | Coos Bay, Oreg. | 250 |
| KGRO | Gresham, Oreg. | 250 |
| KYJC | Medford, Oreg. | 1000 |
| KQIK | Lakeview, Oreg. | 250 |
| KTDO | Toledo, Oreg. | 250 |
| WBVP | Beaver Falls, Pa. | 1000 |
| WEEX | Easton, Pa. | 250 |
| WKBO | Harrisburg, Pa. | 1000 |
| WCRO | Johnstown, Pa. | 1000 |
| WBPZ | Lock Haven, Pa. | 250 |
| WTIV | Titusville, Pa. | 1000 |
| WNIK | Arecibo, P.R. | 250 |
| WERI | Westerly, R.I. | 1000 |
| WAIM | Anderson, S.C. | 1000 |
| WNOK | Columbia, S.C. | 1000d |
| WOLS | Florence, S.C. | 1000 |
| KISD | Sioux Falls, S.Dak. | 1000d |
| WAKI | McMinnville, Tenn. | 1000 |
| KSIX | Corpus Christi, Tex. | 250 |
| KDLK | Del Rio, Tex. | 250 |
| KNUZ | Houston, Tex. | 1000 |
| KERV | Kerrville, Tex. | 250 |
| KLVT | Levelland, Tex. | 250 |
| KEEE | Nacogdoches, Tex. | 250 |
| KOSA | Odessa, Tex. | 250 |
| KHHH | Pampa, Tex. | 250 |
| KSEY | Seymour, Tex. | 1000 |
| KSST | Sulphur Sprgs., Tex. | 250 |
| KWTX | Waco, Tex. | 250 |
| KMUR | Murray, Utah | 250 |
| KOAL | Price, Utah | 250 |
| WJOY | Burlington, Vt. | 1000 |
| WBBI | Abingdon, Va. | 1000d |
| WCFV | Clifton Forge, Va. | 1000 |
| WFVA | Fredericksburg, Va. | 1000 |
| WNOR | Norfolk, Va. | 1000 |
| KWYZ | Everett, Wash. | 1000 |
| KLYK | Spokane, Wash. | 250 |
| KREW | Sunnyside, Wash. | 1000 |
| WLOG | Logan, W.Va. | 1000 |
| WTAP | Parkersburg, W.Va. | 1000 |
| WHBY | Appleton, Wis. | 250 |
| WCLO | Janesville, Wis. | 1000 |
| WHVF | Wausau, Wis. | 250 |
| KVOC | Casper, Wyo. | 1000 |

## 1240—241.8

| | | |
|---|---|---|
| CFLM | La Tuque, Que. | 1000 |
| CFNW | Norman Wells, Northwest Terr. | 100 |
| CFPR | Prince Rupert, B.C. | 250 |
| CFWH | Whitehorse, Y.T. | 250 |
| CJAV | Port Alberni, B.C. | 250 |
| CJCS | Stratford, Ont. | 1000 |
| CJRW | Summerside, P.E.I. | 250 |
| CKBS | St. Hyacinthe, Que. | 250 |
| CKCQ-1 | Williams Lake, B.C. | 250 |
| CKLS | LaSarre, Que. | 250 |
| WEBJ | Brewton, Ala. | 250 |
| WULA | Eufaula, Ala. | 250 |
| WOWL | Florence, Ala. | 1000 |
| WARF | Jasper, Ala. | 1000 |
| KVRD | Cottonwood, Ariz. | 250 |
| KZOW | So. of Globe, Ariz. | 1000 |
| KOFA | Yuma, Ariz. | 250 |
| KVRC | Arkadelphia, Ark. | 250 |
| KWAK | Stuttgart, Ark. | 250 |
| KPLY | Crescent City, Calif. | 250 |
| KMBY | Monterey, Calif. | 1000 |
| KPPC | Pasadena, Calif. | 100 |
| KLOA | Ridgecrest, Calif. | 250 |
| KROY | Sacramento, Calif. | 1000 |
| KRNO | San Bernardino, California | 1000d |
| KSON | San Diego, Calif. | 250 |
| KSMA | Santa Maria, Calif. | 250 |
| KSUE | Susanville, Calif. | 1000 |

Kc. Wave Length W.P.

| | | |
|---|---|---|
| KRDO | Colo. Sprgs., Colo. | 250 |
| KDGO | Durango, Colo. | 250 |
| KSLV | Monte Vista, Colo. | 1000 |
| KCRT | Trinidad, Colo. | 250 |
| WWCO | Waterbury, Conn. | 1000 |
| WBGC | Chipley, Fla. | 250 |
| WLCO | Eustis, Fla. | 250 |
| WINK | Fort Myers, Fla. | 250 |
| WMMB | Melbourne, Fla. | 1000 |
| WFOY | St. Augustine, Fla. | 1000 |
| WBHB | Fitzgerald, Ga. | 250 |
| WDUN | Gainesville, Ga. | 1000 |
| WLAG | LaGrange, Ga. | 1000 |
| WBML | Macon, Ga. | 1000 |
| WWNS | Statesboro, Ga. | 1000 |
| WPAX | Thomasville, Ga. | 250 |
| WTWA | Thomson, Ga. | 250 |
| KLEI | Kailua, Hawaii | 250 |
| KVNI | Coeur d'Alene, Idaho | 250 |
| KFLT | Mountain Home, Idaho | 250 |
| KWIK | Pocatello, Idaho | 250 |
| WCRW | Chicago, Ill. | 1000 |
| WEDC | Chicago, Ill | 1000d |
| WSBC | Chicago, Ill. | 1000 |
| WEBQ | Harrisburg, Ill. | 250 |
| WTAX | Springfield, Ill. | 1000 |
| WSDR | Sterling, Ill. | 100 |
| WHBU | Anderson, Ind. | 250 |
| KDEC | Decorah, Iowa | 250 |
| KWLC | Decorah, Iowa | 250 |
| KBIZ | Ottumwa, Iowa | 1000 |
| KICD | Spencer, Iowa | 1000 |
| KIUL | Garden City, Kans. | 1000 |
| KAKE | Wichita, Kans. | 250 |
| WINN | Louisville, Ky. | 250 |
| WFTM | Maysville, Ky. | 1000 |
| WPKE | Pikeville, Ky. | 250 |
| WSFC | Somerset, Ky. | 250 |
| KASO | Minden, La. | 250 |
| KANE | New Iberia, La. | 250 |
| WCOU | Lewiston, Maine | 1000 |
| WCEM | Cambridge, Md. | 250 |
| WJEJ | Hagerstown, Md. | 1000 |
| WHAI | Greenfield, Mass. | 250 |
| WOCB | W. Yarmouth, Mass. | 1000 |
| WATT | Cadillac, Mich. | 250 |
| WCBY | Cheboygan, Mich. | 250 |
| WJPD | Ishpeming, Mich. | 1000 |
| WJIM | Lansing, Mich. | 1000d |
| WMFG | Hibbing, Minn. | 1000 |
| WJON | St. Cloud, Minn. | 1000 |
| WMPA | Aberdeen, Miss. | 250 |
| WGRM | Greenwood, Miss. | 250 |
| WGCM | Gulfport, Miss. | 250 |
| WMIS | Natchez, Miss. | 250 |
| KFMO | Flat River, Mo. | 250 |
| KWOS | Jefferson City, Mo. | 1000d |
| KODE | Joplin, Mo. | 1000d |
| KNEM | Nevada, Mo. | 250 |
| KBMY | Billings, Mont. | 1000 |
| KLTZ | Glasgow, Mont. | 250 |
| KBLL | Helena, Mont. | 250 |
| KFOR | Lincoln, Nebr. | 1000 |
| KODY | North Platte, Nebr. | 1000 |
| KELK | Elko, Nev. | 1000 |
| WSNJ | Bridgeton, N.J. | 250 |
| KAVE | Carlsbad, N.Mex. | 250 |
| KCLV | Clovis, N.Mex. | 1000 |
| WGBB | Freeport, N.Y. | 250 |
| WGVA | Geneva, N.Y. | 1000d |
| WJTM | Jamestown, N.Y. | 1000 |
| WVOS | Liberty, N.Y. | 250 |
| WNBZ | Saranac Lake, N.Y. | 1000 |
| WSNY | Schenectady, N.Y. | 1000d |
| WATN | Watertown, N.Y. | 250 |
| WPNF | Brevard, N.C. | 250 |
| WIST | Charlotte, N.C. | 1000 |
| WCNC | Elizabeth City, N.C. | 250 |
| WJNC | Jacksonville, N.C. | 1000 |
| WRAL | Raleigh, N.C. | 1000 |
| KDLR | Devils Lake, N.Dak. | 250 |
| WBBW | Youngstown, Ohio | 1000 |
| WHIZ | Zanesville, Ohio | 250 |
| KVSO | Ardmore, Okla. | 250 |
| KBEK | Elk City, Okla. | 250 |
| KBEL | Idabel, Okla. | 250 |
| KOKL | Okmulgee, Okla. | 250 |
| KFLY | Corvallis, Oreg. | 1000d |
| KKID | Pendleton, Oreg. | 1000 |
| KPRB | Redmond, Oreg. | 250 |
| WRTA | Altoona, Pa. | 1000 |
| WHUM | Reading, Pa. | 250 |
| WKOK | Sunbury, Pa. | 250 |
| WBAX | Wilkes-Barre, Pa. | 250 |
| WALO | Humacao, P.R. | 1000 |
| WWON | Woonsocket, R.I. | 1000 |
| WKDK | Newberry, S.C. | 250 |
| WDXY | Sumter, S.C. | 250 |
| WBEJ | Elizabethton, Tenn. | 1000 |
| WEKR | Fayetteville, Tenn. | 1000 |
| WBIR | Knoxville, Tenn. | 1000 |
| WKDA | Nashville, Tenn. | 1000 |
| WENK | Union City, Tenn. | 1000 |
| KVLF | Alpine, Tex. | 1000 |
| KEAN | Brownwood, Tex. | 1000 |
| KORA | Bryan, Tex. | 250 |
| KOCA | Kilgore, Tex. | 250 |
| KSOX | Raymondville, Tex. | 250 |
| KCKG | Snora, Tex. | 250 |
| KXOX | Sweetwater, Tex. | 250 |
| WSKI | Montpelier, Vt. | 1000 |
| WSSV | Petersburg, Va. | 1000 |
| WROV | Roanoke, Va. | 250 |
| WTON | Staunton, Va. | 1000 |
| KXLE | Ellensburgh, Wash. | 250 |
| KGY | Olympia, Wash. | 1000 |
| WKOY | Bluefield, W.Va. | 250 |
| WTIP | Charleston, W.Va. | 1000 |

Kc. Wave Length W.P.

| | | |
|---|---|---|
| WDNE | Elkins, W.Va. | 1000 |
| WOMT | Manitowoc, Wis. | 250 |
| WIBU | Poynette, Wis. | 250 |
| WOBT | Rhinelander, Wis. | 1000 |
| WJMC | Rice Lake, Wis. | 1000 |
| KFBC | Cheyenne, Wyo. | 1000 |
| KLUK | Evanston, Wyo. | 1000 |
| KASL | Newcastle, Wyo. | 250 |
| KRAL | Rawlins, Wyo. | 1000 |
| KTHE | Thermopolis, Wyo. | 1000 |

## 1250—239.9

| | | |
|---|---|---|
| CHWO | Oakville, Ont. | 1000 |
| CKBL | Matane, Que. | 5000 |
| CKOM | Saskatoon, Sask. | 10000 |
| WZOB | Ft. Payne, Ala. | 1000d |
| WETU | Wetumpka, Ala. | 5000d |
| KAKA | Wickenburg, Ariz. | 500d |
| KWCX | Willcox, Ariz. | 1000d |
| KFAY | Fayetteville, Ark. | 1000d |
| KAJI | Little Rock, Ark. | 1000 |
| KHOT | Madera, Calif. | 500d |
| KTMS | Santa Barbara, Calif. | 1000 |
| KDHI | Twenty-Nine Palms, California | 1000d |
| KMSL | Ukiah, Calif. | 500d |
| KICM | Golden, Colo. | 1000d |
| WNER | Live Oak, Fla. | 1000d |
| WRIM | Pahokee, Fla. | 500d |
| WOAE | Tampa, Fla. | 5000 |
| WYTH | Madison, Ga. | 1000d |
| WIZZ | Streator, Ill. | 500d |
| WGL | Ft. Wayne, Ind. | 1000 |
| WRAY | Princeton, Ind. | 1000d |
| KCFI | Cedar Falls, Iowa | 500d |
| KFKU | Lawrence, Kans. | 5000 |
| WREN | Topeka, Kans. | 5000 |
| WNVL | Nicholasville, Ky. | 500 |
| WLCK | Scottsville, Ky. | 500d |
| WGUY | Bangor, Maine | 5000d |
| WARE | Ware, Mass. | 1000 |
| WWBC | Bay City, Mich. | 1000d |
| KOTE | Fergus Falls, Minn. | 1000 |
| KCUE | Red Wing, Minn. | 1000d |
| WHNY | McComb, Miss. | 5000 |
| KHTN | Houston, Mo. | 500d |
| WKBR | Manchester, N.H. | 5000 |
| WMTR | Morristown, N.J. | 5000d |
| WIPS | Ticonderoga, N.Y. | 1000d |
| WFAG | Farmville, N.C. | 500d |
| WBRM | Marion, N.C. | 1000d |
| WCHO | Washington Court House, Ohio | 500d |
| KQEN | Roseburg, Oreg. | 5000d |
| WLEM | Emporium, Pa. | 1000d |
| WPEL | Montrose, Pa. | 1000d |
| WRYT | Pittsburgh, Pa. | 5000 |
| WNOW | York, Pa. | 1000d |
| WTMA | Charleston, S.C. | 5000 |
| WCKM | Winnsboro, S.C. | 500d |
| WKBL | Covington, Tenn. | 1000d |
| WNTT | Tazewell, Tenn. | 500d |
| KFTV | Paris, Tex. | 500d |
| KPAC | Port Arthur, Tex. | 5000 |
| KUKA | San Antonio, Tex. | 500d |
| KTFO | Seminole, Tex. | 1000d |
| KANN | Ogden, Utah | 1000d |
| KVEL | Vernal, Utah | 5000d |
| WDVA | Danville, Va. | 5000 |
| WYSR | Franklin, Va. | 1000d |
| WNRG | Grundy, Va. | 1000d |
| KWSC | Pullman, Wash. | 5000 |
| KTW | Seattle, Wash. | 1000 |
| WEMP | Milwaukee, Wis. | 5000 |

## 1260—238.0

| | | |
|---|---|---|
| CFRN | Edmonton, Alta. | 50000 |
| DYBU | Cebu, P.I. | 1000 |
| WCRT | Birmingham, Ala. | 5000d |
| KPIN | Casa Grande, Ariz. | 1000d |
| KCCB | Corning, Ark. | 500d |
| KBHC | Nashville, Ark. | 500d |
| KGIL | San Fernando, Calif. | 5000 |
| KYA | San Francisco, Calif. | 5000 |
| WMMM | Westport, Conn. | 1000d |
| WNRK | Newark, Del. | 500d |
| WWDC | Washington, D.C. | 5000 |
| WFTW | Fort Walton Beach, Florida | 1000d |
| WAME | Miami, Fla. | 5000d |
| WWPF | Palatka, Fla. | 1000 |
| WHAB | Baxley, Ga. | 5000d |
| WBBK | Blakely, Ga. | 1000d |
| WTJH | East Point, Ga. | 5000d |
| KIFI | Idaho Falls, Idaho | 5000 |
| KWEI | Weiser, Ida. | 1000d |
| WIBV | Belleville, Ill. | 1000d |
| WFBM | Indianapolis, Ind. | 5000 |
| KFGQ | Boone, Iowa | 250d |
| KWHK | Hutchinson, Kans. | 1000 |
| WXOK | Baton Rouge, La. | 1000d |
| WEZE | Boston, Mass. | 5000 |
| WALM | Albion, Mich. | 1000 |
| WJBL | Holland, Mich. | 5000d |
| KROX | Crookston, Minn. | 1000 |
| KDUZ | Hutchinson, Minn. | 1000d |
| WGVM | Greenville, Miss. | 5000d |
| WNSL | Laurel, Miss. | 5000d |
| KGBX | Springfield, Mo. | 5000 |
| KIMB | Kimball, Nebr. | 1000d |
| WBUD | Trenton, N.J. | 5000 |
| KVSF | Santa Fe, N.Mex. | 1000 |
| WBNR | Beacon, N.Y. | 1000d |
| WNDR | Syracuse, N.Y. | 5000 |
| WGWR | Asheboro, N.C. | 1000d |
| WCDJ | Edenton, N.C. | 1000d |
| WDOK | Cleveland, Ohio | 5000 |
| WNXT | Portsmouth, Ohio | 5000 |

Kc. Wave Length W.P.

| | | |
|---|---|---|
| KWSH | Wewoka-Seminole, Oklahoma | 1000 |
| KMCM | McMinnville, Oreg. | 1000 |
| WWYN | Erie, Pa. | 5000 |
| WPHB | Philipsburg, Pa. | 5000d |
| WISO | Ponce, P.R. | 1000 |
| WMUU | Greenville, S.C. | 5000d |
| WJOT | Lake City, S.C. | 1000d |
| KWYR | Winner, S.Dak. | 5000d |
| WNOO | Chattanooga, Tenn. | 1000d |
| WMCH | Church Hill, Tenn. | 1000d |
| WDKN | Dickson, Tenn. | 1000d |
| WCLC | Jamestown, Tenn. | 1000d |
| KSPL | Diboll, Tex. | 1000d |
| KPSO | Falfurrias, Tex. | 500d |
| KWFR | San Angelo, Tex. | 1000d |
| KTUE | Tulia, Tex. | 1000d |
| KTAE | Taylor, Tex. | 1000d |
| WCHV | Charlottesville, Va. | 5000 |
| WBCR | Christiansburg, Va. | 1000d |
| KWIQ | Moses Lake, Wash. | 1000d |
| WVVW | Grafton, W.Va. | 500d |
| WWIS | Black River Falls, Wis. | 1000d |
| WEKZ | Monroe, Wis. | 1000d |
| KPOW | Powell, Wyo. | 5000 |

## 1270—236.1

| | | |
|---|---|---|
| CHAT | Medicine Hat, Alta. | 10000 |
| CHWK | Chilliwack, B.C. | 10000 |
| CJCB | Sydney, N.S. | 5000 |
| CFGT | St. Joseph d'Alma, Quebec | 1000 |
| WGSV | Guntersville, Ala. | 1000d |
| WAIP | Prichard, Ala. | 1000d |
| KBYR | Anchorage, Alaska | 1000 |
| KDJI | Holbrook, Ariz. | 1000d |
| KADL | Pine Bluff, Ark. | 5000d |
| KCOK | Tulare, Calif. | 1000 |
| WNOG | Naples, Fla. | 500d |
| WHIY | Orlando, Fla. | 5000d |
| WTAL | Tallahassee, Fla. | 5000 |
| WKRW | Cartersville, Ga. | 500d |
| WGBA | Columbus, Ga. | 5000d |
| WJJC | Commerce, Ga. | 1000d |
| KNDI | Honolulu, Hawaii | 5000 |
| KTFI | Twin Falls, Idaho | 5000 |
| WEIC | Charleston, Ill. | 1000d |
| WHBF | Rock Island, Ill. | 5000 |
| WCMR | Elkhart, Ind. | 5000 |
| WWCA | Gary, Ind. | 1000 |
| WORX | Madison, Ind. | 1000d |
| KSCB | Liberal, Kans. | 1000 |
| WAIN | Columbia, Ky. | 1000d |
| WFUL | Fulton, Ky. | 1000d |
| KVCL | Winnfield, La. | 1000d |
| WSPR | Springfield, Mass. | 5000 |
| WXYZ | Detroit, Mich. | 5000 |
| KWEB | Rochester, Minn. | 500d |
| WVOM | Ioka, Miss. | 1000d |
| WLSM | Louisville, Miss. | 1000d |
| KUSN | St. Joseph, Mo. | 1000d |
| KBUB | Sparks, Nev. | 1000d |
| WTSN | Dover, N.H. | 5000 |
| WDVL | Vineland, N.J. | 500d |
| KRAC | Alamogordo, N.Mex. | 1000d |
| WHLD | Niagara Falls, N.Y. | 5000d |
| WDLA | Walton, N.Y. | 1000d |
| WGGC | Belmont, N.C. | 1000 |
| WMPM | Smithfield, N.C. | 5000d |
| KBOM | Mandan, N.Dak. | 1000 |
| WILE | Cambridge, Ohio | 1000d |
| KWPR | Claremore, Okla. | 500d |
| KAJO | Grants Pass, Oreg. | 5000d |
| WLBR | Lebanon, Pa. | 1000 |
| WBHC | Hampton, S.C. | 1000d |
| KNWC | Sioux Falls, S.Dak. | 1000 |
| WLIK | Newport, Tenn. | 5000d |
| KIOX | Bay City, Tex. | 1000 |
| KHEM | Big Spring, Tex. | 1000d |
| KEPS | Eagle Pass, Tex. | 1000d |
| KFJZ | Fort Worth, Tex. | 5000 |
| WTIO | Newport News, Va. | 1000d |
| WHEO | Stuart, Va. | 1000d |
| KCVL | Colville, Wash. | 1000d |
| KBAM | Longview, Wash. | 5000d |
| WKYR | Keyser, W.Va. | 5000d |
| WRJC | Mauston, Wis. | 500d |

## 1280—234.2

| | | |
|---|---|---|
| CHIQ | Hamilton, Ont. | 5000 |
| CJMS | Montreal, Que. | 10000 |
| CKCV | Quebec, Que. | 10000 |
| CJSL | Estevan, Sask. | 1000 |
| WPID | Piedmont, Ala. | 1000d |
| WNPT | Tuscaloosa, Ala. | 5000 |
| KHEP | Phoenix, Ariz. | 1000d |
| KNBY | Newport, Ark. | 1000d |
| KFOX | Long Beach, Calif. | 1000 |
| KCJH | San Luis Obispo, Cal. | 500d |
| KJOY | Stockton, Calif. | 1000 |
| KTLN | Denver, Colo. | 5000 |
| WSUX | Seaford, Del. | 1000d |
| WDSP | DeFuniak Springs, Florida | 5000d |
| WQIK | Jacksonville, Fla. | 5000d |
| WIPC | Lake Wales, Fla. | 1000d |
| WYND | Sarasota, Fla. | 500d |
| WIBB | Macon, Ga. | 5000d |
| WMRO | Aurora, Ill. | 1000d |
| WGBF | Evansville, Ind. | 5000 |
| KCOB | Newton, Iowa | 1000d |
| KSOK | Arkansas City, Kans. | 1000 |
| WCPM | Cumberland, Ky. | 1000d |
| WDSU | New Orleans, La. | 5000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| KWCL | Oak Grove, La. | 500d |
| WEIM | Fitchburg, Mass. | 5000 |
| WFYC | Alma, Mich. | 1000d |
| WTCN | Minneapolis, Minn. | 5000 |
| KVOX | Moorhead, Minn. | 1000 |
| KDKD | Clinton, Mo. | 1000d |
| KYRO | Potosi, Mo. | 500d |
| KCNI | Broken Bow, Nebr. | 1000d |
| KTOO | Henderson, Nev. | 5000d |
| WHBI | Newark, N.J. | 2500 |
| KRZE | Farmington, N.Mex. | 5000d |
| WADO | New York, N.Y. | 5000 |
| WROC | Rochester, N.Y. | 5000d |
| WSAT | Salisbury, N.C. | 1000 |
| WYAL | Scotland Neck, N.C. | 5000d |
| WONW | Defiance, Ohio | 1000 |
| WLMJ | Jackson, Ohio | 1000d |
| KLCO | Poteau, Okla. | 1000d |
| KERG | Eugene, Oreg. | 5000 |
| WBRX | Berwick, Pa. | 500d |
| WHVR | Hanover, Pa. | 5000 |
| WKST | New Castle, Pa. | 1000 |
| WCMN | Arecibo, P.R. | 1000 |
| WANS | Anderson, S.C. | 5000 |
| WJAY | Mullins, S.C. | 1000d |
| WMCP | Columbia, Tenn. | 1000d |
| WDNT | Dayton, Tenn. | 1000d |
| KNIT | Abilene, Tex. | 500d |
| KWHI | Brenham, Tex. | 1000d |
| KLUE | Longview, Tex. | 1000d |
| KRAN | Morton, Tex. | 500 |
| KNAK | Salt Lake City, Utah | 5000 |
| WKDE | Altavista, Va. | 500d |
| WYVE | Wytheville, Va. | 1000d |
| KUDY | Spokane, Wash. | 5000d |
| KIT | Yakima, Wash. | 5000 |
| WVAR | Richwood, W.Va. | 1000d |
| WNAM | Neenah, Wis. | 1000 |

## 1290—232.4

| | | |
|---|---|---|
| CFAM | Altona, Man. | 10000 |
| CKSL | London, Ont. | 5000 |
| WTHG | Jackson, Ala. | 1000d |
| WSHF | Sheffield, Ala. | 1000d |
| WMLS | Sylacauga, Ala. | 1000d |
| KEOS | Flagstaff, Ariz. | 1000 |
| KCUB | Tucson, Ariz. | 1000 |
| KDMS | El Dorado, Ark. | 5000d |
| KUOA | Siloam Sprgs., Ark. | 5000d |
| KHSL | Chico, Calif. | 5000 |
| KPER | Gilroy, Calif. | 5000d |
| KMEN | San Bernardino, California | 5000 |
| KACL | Santa Barbara, Calif. | 5000d |
| WCCC | Hartford, Conn. | 500d |
| WTUX | Wilmington, Del. | 1000d |
| WTMC | Ocala, Fla. | 5000 |
| WSCM | Panama City Beach, Florida | 500d |
| WIRK | W. Palm Bch., Fla. | 5000 |
| WDEC | Americus, Ga. | 1000d |
| WCHK | Canton, Ga. | 1000d |
| WTOC | Savannah, Ga. | 5000 |
| KSNN | Pocatello, Idaho | 1000d |
| WIRL | Peoria, Ill. | 5000 |
| KPRT | Pratt, Kansas | 5000 |
| WCBL | Benton, Ky. | 5000d |
| KJEF | Jennings, La. | 1000d |
| WHGR | Houghton Lake, Mich. | 5000 |
| WNIL | Niles, Mich. | 500d |
| WOIA | Saline, Mich. | 500d |
| KBMO | Benson, Minn. | 500d |
| WBLE | Batesville, Miss. | 1000d |
| KALM | Thayer, Mo. | 1000d |
| KGVO | Missoula, Mont. | 5000 |
| KOIL | Omaha, Nebr. | 5000 |
| WKNE | Keene, N.H. | 5000 |
| KSRC | Socorro, N.M. | 1000d |
| WGLI | Babylon, N.Y. | 1000 |
| WNBF | Binghamton, N.Y. | 5000 |
| WHKY | Hickory, N.C. | 5000 |
| WEYE | Sanford, N.C. | 1000d |
| WOMP | Bellaire, Ohio | 1000d |
| WHIO | Dayton, Ohio | 5000 |
| KUMA | Pendleton, Oreg. | 5000 |
| KLIQ | Portland, Oreg. | 5000d |
| WFBG | Altoona, Pa. | 5000 |
| WICE | Providence, R.I. | 5000 |
| WFIG | Sumter, S.C. | 1000 |
| WATO | Oak Ridge, Tenn. | 1000 |
| KBLT | Big Lake, Tex. | 1000d |
| KIVY | Crockett, Tex. | 500d |
| KRGV | Weslaco, Tex. | 5000 |
| KTRN | Wichita Falls, Tex. | 5000 |
| WPVA | Colonial Hgts., Va. | 5000d |
| WAGE | Leesburg, Va. | 1000d |
| WKWS | Rocky Mount, Va. | 1000d |
| WVOW | Logan, W.Va. | 5000 |
| KAPY | Port Angeles, Wash. | 1000d |
| WMIL | Milwaukee, Wis. | 1000d |
| WCOW | Sparta, Wis. | 5000d |
| KOWB | Laramie, Wyo. | 5000 |

## 1300—230.6

| | | |
|---|---|---|
| CBAF | Moncton, N.B. | 5000 |
| CJME | Regina, Sask. | 1000 |
| WBSA | Boaz, Ala. | 500d |
| WTLS | Tallassee, Ala. | 1000d |
| KWCB | Searcy, Ark. | 1000d |
| KROP | Brawley, Calif. | 1000 |
| KYNO | Fresno, Calif. | 5000 |
| KWKW | Pasadena, Calif. | 1000 |
| KKCN | Ukiah, Calif. | 5000d |
| KVOR | Colo. Sprgs., Colo. | 1000 |
| WAVZ | New Haven, Conn. | 1000 |
| WRKT | Cocoa Beach, Fla. | 500d |
| WFFG | Marathon, Fla. | 500d |
| WSOL | Tampa, Fla. | 5000d |
| WMTM | Moultrie, Ga. | 5000d |
| WNEA | Newman, Ga. | 500 |
| WIMO | Winder, Ga. | 1000d |
| KOZE | Lewiston, Idaho | 5000 |
| WTAQ | LaGrange, Ill. | 1000 |
| WFRX | W. Frankfort, Ill. | 1000d |
| WHLT | Huntington, Ind. | 500d |
| WMFT | Terre Haute, Ind. | 500d |
| KGLO | Mason City, Iowa | 5000 |
| WBLG | Lexington, Ky. | 1000 |
| WIBR | Baton Rouge, La. | 1000 |
| KANB | Shreveport, La. | 1000d |
| WFBR | Baltimore, Md. | 5000 |
| WJDA | Quincy, Mass. | 1000d |
| WOOD | Grand Rapids, Mich. | 5000 |
| WRBC | Jackson, Miss. | 5000 |
| KMMO | Marshall, Mo. | 1000d |
| KBRL | McCook, Nebr. | 1000d |
| KPTL | Carson City, Nev. | 5000 |
| WAAT | Trenton, N.J. | 250d |
| WOSC | Fulton, N.Y. | 1000d |
| WEEE | Rensselaer, N.Y. | 5000d |
| WGOL | Goldsboro, N.C. | 1000d |
| WLNC | Laurensburg, N.C. | 500 |
| WSYD | Mt. Airy, N.C. | 5000 |
| WERE | Cleveland, Ohio | 5000 |
| WMVO | Mt. Vernon, Ohio | 500 |
| KOME | Tulsa, Okla. | 5000 |
| KDOV | Medford, Oreg. | 5000d |
| KACI | The Dalles, Oreg. | 1000d |
| WWCH | Clarion, Pa. | 500d |
| WTHT | Hazleton, Pa. | 1000d |
| WTIL | Mayaguez, P.R. | 1000 |
| WCKI | Greer, S.C. | 1000d |
| WKSC | Kershaw, S.C. | 500d |
| KOLY | Mobridge, S.Dak. | 1000d |
| WMTN | Morristown, Tenn. | 5000d |
| WMAK | Nashville, Tenn. | 5000 |
| KVET | Austin, Tex. | 1000 |
| KTFY | Brownfield, Tex. | 1000d |
| KGNS | Laredo, Tex. | 500d |
| KKAS | Silsbee, Tex. | 500d |
| KSTU | Logan, Utah | 1000 |
| KOL | Seattle, Wash. | 5000 |
| WCLG | Morgantown, W.Va. | 1000d |
| WKLC | St. Albans, W.Va. | 1000d |

## 1310—228.9

| | | |
|---|---|---|
| CKOY | Ottawa, Ont. | 50000 |
| CFGM | Richmond Hill, Ont. | 10000 |
| WHEP | Foley, Ala. | 1000d |
| CHGB | St. Anne-de-la-Pocatiere, Quebec | 5000d |
| WJAM | Marion, Ala. | 5000d |
| KBUZ | Mesa, Ariz. | 5000 |
| KBOK | Malvern, Ark. | 1000d |
| KIOT | Barstow, Calif. | 500d |
| KPOD | Crescent City, Calif. | 1000d |
| KDIA | Oakland, Calif. | 1000 |
| KTKR | Taft, Calif. | 500d |
| KFKA | Greeley, Colo. | 1000 |
| WICH | Norwich, Conn. | 5000 |
| WOOO | Deland, Fla. | 5000d |
| WAUC | Wauchula, Fla. | 500d |
| WBRO | Waynesboro, Ga. | 1000d |
| WBMK | West Point, Ga. | 1000d |
| KLIX | Twin Falls, Idaho | 5000 |
| WISH | Indianapolis, Ind. | 5000 |
| KOLS | Perry, Iowa | 500d |
| KOKX | Keokuk, Iowa | 1000 |
| WTTL | Madisonville, Ky. | 500d |
| WDOC | Prestonsburg, Ky. | 5000d |
| KIKS | Sulphur, La. | 500d |
| KUZN | W. Monroe, La. | 1000d |
| WLOB | Portland, Maine | 1000d |
| WORC | Worcester, Mass. | 5000 |
| WKMH | Dearborn, Mich. | 5000 |
| WCCW | Traverse City, Mich. | 1000d |
| KRBI | St. Peter, Minn. | 1000d |
| WXXX | Hattiesburg, Miss. | 1000d |
| KFSB | Joplin, Mo. | 5000 |
| KFBB | Great Falls, Mont. | 5000 |
| KGMT | Fairbury, Nebr. | 500d |
| WJLK | Asbury Park, N.J. | 250 |
| WCAM | Camden, N.J. | 250 |
| KARA | Albuquerque, N.M. | 1000d |
| WVIP | Mt. Kisco, N.Y. | 5000d |
| WTLB | Utica, N.Y. | 1000 |
| WISE | Asheville, N.C. | 5000 |
| WKTC | Charlotte, N.C. | 1000 |
| WTIK | Durham, N.C. | 1000 |
| KNOX | Grand Forks, N.Dak. | 5000 |
| WFAH | Alliance, Ohio | 1000d |
| KNPT | Newport, Oreg. | 5000 |
| WBFD | Bedford, Pa. | 5000d |
| WGSA | Ephrata, Pa. | 5000d |
| WNAE | Warren, Pa. | 5000d |
| WDKD | Kingstree, S.C. | 5000d |
| WDOD | Chattanooga, Tenn. | 5000 |
| WDXI | Jackson, Tenn. | 5000 |
| WBNT | Oneida, Tenn. | 1000d |
| KZIP | Amarillo, Tex. | 1000d |
| WRR | Dallas, Tex. | 5000 |
| KOYL | Odessa, Tex. | 1000d |
| KUBO | San Antonio, Tex. | 5000d |
| WEEL | Fairfax, Va. | 1000 |
| WGH | Newport News, Va. | 5000 |
| KARY | Prosser, Wash. | 1000d |
| WIBA | Madison, Wis. | 5000 |

## 1320—227.1

| | | |
|---|---|---|
| CHQM | Vancouver, B.C. | 10000 |
| CKEC | New Glasgow, N.S. | 5000 |
| CJSO | Sorel, P.Q. | 1000 |
| CKKW | Kitchener, Ont. | 1000 |
| WAGF | Dothan, Ala. | 1000 |
| WENN | Birmingham, Ala. | 5000d |
| KBLU | Yuma, Ariz. | 500d |
| KWHN | Fort Smith, Ark. | 5000 |
| KRLW | Walnut Ridge, Ark. | 1000d |
| KHSJ | Hemet, Calif. | 500d |
| KLAN | Lemoore, Calif. | 1000d |
| KUDE | Oceanside, Calif. | 500 |
| KCRA | Sacramento, Calif. | 5000 |
| KAVI | Rocky Ford, Colo. | 1000d |
| WATR | Waterbury, Conn. | 5000 |
| WGMA | Hollywood, Fla. | 1000d |
| WZOK | Jacksonville, Fla. | 5000 |
| WAMR | Venice, Fla. | 500d |
| WHIE | Griffin, Ga. | 5000d |
| WKAN | Kankakee, Ill. | 1000 |
| KNIA | Knoxville, Iowa | 500d |
| KMAQ | Maquoketa, Iowa | 500d |
| KLWN | Lawrence, Kans. | 500d |
| WBRT | Bardstown, Ky. | 1000d |
| WNGO | Mayfield, Ky. | 1000d |
| KHAL | Homer, La. | 1000d |
| WICO | Salisbury, Md. | 1000d |
| WARA | Attleboro, Mass. | 1000 |
| WILS | Lansing, Mich. | 5000 |
| WDMJ | Marquette, Mich. | 1000 |
| WRJW | Picayune, Miss. | 5000d |
| KXLW | Clayton, Mo. | 1000d |
| KOLT | Scottsbluff, Nebr. | 5000 |
| WWHG | Hornell, N.Y. | 5000d |
| WQSR | Solvay, N.Y. | 500d |
| WAGY | Forest City, N.C. | 1000 |
| WCOG | Greensboro, N.C. | 5000 |
| WEEW | Washington, N.C. | 500d |
| KQDY | Minot, N.Dak. | 1000d |
| WHOK | Lancaster, Ohio | 1000d |
| KWOE | Clinton, Okla. | 1000d |
| KATR | Eugene, Ore. | 1000d |
| WKAP | Allentown, Pa. | 5000 |
| WGET | Gettysburg, Pa. | 1000 |
| WJAS | Pittsburgh, Pa. | 5000 |
| WSCR | Scranton, Pa. | 1000 |
| WRIO | Rio Piedras, P.R. | 5000 |
| WOIC | Columbia, S.C. | 1000 |
| KELO | Sioux Falls, S.Dak. | 5000 |
| WKIN | Kingsport, Tenn. | 5000d |
| WMSR | Manchester, Tenn. | 1000d |
| KVMC | Colo. City, Tex. | 1000d |
| KXYZ | Houston, Tex. | 5000 |
| KCPX | Salt Lake City, Utah | 5000 |
| WDMS | Lynchburg, Va. | 1000 |
| WEET | Richmond, Va. | 1000d |
| KXRO | Aberdeen, Wash. | 1000 |
| KHIT | Walla Walla, Wash. | 1000d |
| WQMN | Superior, Wis. | 1000d |
| WFHR | Wisconsin Rapids, Wis. | 5000 |

## 1330—225.4

| | | |
|---|---|---|
| WROS | Scottsboro, Ala. | 1000d |
| KMOP | Tucson, Ariz. | 500d |
| KVEE | Conway, Ark. | 500d |
| KFAC | Los Angeles, Calif. | 5000 |
| KLBS | Los Banos, Calif. | 500d |
| KAHR | Redding, Calif. | 5000d |
| WARN | Ft. Pierce, Fla. | 1000 |
| WYSE | Lakeland, Fla. | 1000d |
| WEBY | Milton, Fla. | 5000d |
| WMEN | Tallahassee, Fla. | 5000d |
| WMLT | Dublin, Ga. | 5000d |
| WEAW | Evanston, Ill. | 5000d |
| WRAM | Monmouth, Ill. | 1000d |
| WRRR | Rockford, Ill. | 1000d |
| WJPS | Evansville, Ind. | 5000 |
| KWWL | Waterloo, Iowa | 5000 |
| KFH | Wichita, Kans. | 5000 |
| WYGO | Corbin, Ky. | 5000d |
| WMOR | Morehead, Ky. | 1000d |
| KVOL | Lafayette, La. | 1000 |
| WASA | Harve deGrace, Md. | 1000d |
| WCRB | Waltham, Mass. | 5000 |
| WTRX | Flint, Mich. | 5000 |
| WLOL | Minneapolis, Minn. | 5000 |
| WJPR | Greenville, Miss. | 1000 |
| WDAL | Meridian, Miss. | 1000d |
| KUKU | Willow Springs, Mo. | 1000d |
| KGAK | Gallup, N.Mex. | 5000 |
| WEVD | New York, N.Y. | 5000 |
| WPOW | New York, N.Y. | 5000 |
| WEBO | Owego, N.Y. | 1000d |
| WHAZ | Troy, N.Y. | 1000 |
| WHOT | Campbell, Ohio | 500 |
| WFIN | Findlay, Ohio | 1000d |
| WKOV | Wellston, Ohio | 500d |
| KPOJ | Portland, Oreg. | 5000 |
| WBLF | Bellefonte, Pa. | 500 |
| WICU | Erie, Pa. | 5000 |
| WLAT | Conway, S.C. | 5000d |
| WFBC | Greenville, S.C. | 5000 |
| WAEW | Crossville, Tenn. | 1000d |
| WTRO | Dyersburg, Tenn. | 500d |
| KMIL | Cameron, Tex. | 500d |
| KSWA | Graham, Tex. | 500d |
| KINE | Kingsville, Tex. | 1000d |
| KVKM | Monahans, Tex. | 5000 |
| KDOK | Tyler, Tex. | 1000d |
| WBTM | Danville, Va. | 5000 |
| WRAA | Luray, Va. | 1000d |
| WESR | Tasley, Va. | 1000d |
| KFKF | Bellevue, Wash. | 5000d |
| KCFA | Spokane, Wash. | 5000d |
| WETZ | New Martinsville, W.Va. | 1000d |
| WHBL | Sheboygan, Wis. | 1000 |
| KOVE | Lander, Wyo. | 1000 |

## 1340—223.7

| | | |
|---|---|---|
| CFGB | Goose Bay, Nfld. | 1000 |
| CJAF | Cabano, Que. | 250 |
| CFSL | Weyburn, Sask. | 1000 |
| CFYK | Yellow Knife, N.W.T. | 250 |
| CHAD | Amos, Que. | 250 |
| CJLS | Yarmouth, N.S. | 250 |
| CHRD | Drummondville, Que. | 250 |
| CJQC | Quebec, Que. | 250 |
| CKAR-1 | Parry Sound, Ont. | 250 |
| CKOX | Woodstock, Ont. | 250 |
| WKUL | Cullman, Ala. | 250 |
| WJOI | Florence, Ala. | 250 |
| WGWC | Selma, Ala. | 250 |
| WFEB | Sylacauga, Ala. | 250 |
| KIBH | Seward, Alaska | 250 |
| KIKO | Miami, Ariz. | 250 |
| KNOG | Nogales, Ariz. | 250 |
| KPGE | Page, Ariz. | 250 |
| KENT | Prescott, Ariz. | 250 |
| KBTA | Batesville, Ark. | 1000 |
| KAAB | Hot Springs, Ark. | 500 |
| KBRS | Springdale, Ark. | 250 |
| KENL | Arcata, Calif. | 250 |
| KMAK | Fresno, Calif. | 250 |
| KDOL | Mojave, Calif. | 100 |
| KSFE | Needles, Calif. | 250 |
| KATY | San Luis Obispo, California | 1000 |
| KIST | Santa Barbara, Calif. | 1000 |
| KOMY | Watsonville, Calif. | 1000 |
| KDEN | Denver, Colo. | 250 |
| KWSL | Grand Junction, Colo. | 250 |
| KVRH | Salida, Colo. | 250 |
| WNHC | New Haven, Conn. | 1000 |
| WOOK | Washington, D.C. | 250 |
| WSLG | Clermont, Fla. | 250 |
| WTAN | Clearwater, Fla. | 250 |
| WROD | Daytona Bch., Fla. | 1000 |
| WDSR | Lake City, Fla. | 1000 |
| WTYS | Marianna, Fla. | 1000 |
| WQXT | Palm Beach, Fla. | 250 |
| WSEB | Sebring, Fla. | 250 |
| WNSM | Valparaiso-Niceville, Fla. | 250 |
| WAKE | Atlanta, Ga. | 1000 |
| WGAU | Athens, Ga. | 1000 |
| WBBQ | Augusta, Ga. | 1000 |
| WGAA | Cedartown, Ga. | 1000 |
| WOKS | Columbus, Ga. | 1000 |
| WBBT | Lyons, Ga. | 250 |
| WTIF | Tifton, Ga. | 1000 |
| KWLW | Wampa, Idaho | 1000 |
| KPST | Preston, Idaho | 250 |
| KSKI | Sun Valley, Idaho | 1000 |
| WSOY | Decatur, Ill. | 1000 |
| WJPF | Herrin, Ill. | 250 |
| WJOL | Joliet, Ill. | 250 |
| WBIW | Bedford, Ind. | 1000 |
| WTRC | Elkhart, Ind. | 1000 |
| WLBC | Muncie, Ind. | 1000 |
| KROS | Clinton, Iowa | 250 |
| KLIL | Estherville, Iowa | 100 |
| KCKN | Kansas City, Kans. | 250 |
| KSEK | Pittsburg, Kans. | 250 |
| WCMI | Ashland, Ky. | 250 |
| WBGN | Bowling Green, Ky. | 250 |
| WNBS | Murray, Ky. | 250 |
| WEKY | Richmond, Ky. | 250 |
| KVOB | Bastrop, La. | 250 |
| KRMD | Shreveport, La. | 250 |
| WFAU | Augusta, Maine | 1000 |
| WHOU | Houlton, Maine | 1000 |
| WGAW | Gardner, Mass. | 1000 |
| WNBH | New Bedford, Mass. | 1000 |
| WBRK | Pittsfield, Mass. | 1000 |
| WLEW | Bad Axe, Mich. | 250 |
| WLAV | Grand Rap., Mich. | 1000 |
| WCSR | Hillsdale, Mich. | 1000 |
| WMTE | Manistee, Mich. | 1000 |
| WAGN | Menominee, Mich. | 250 |
| WMBN | Petoskey, Mich. | 1000 |
| WEXL | Royal Oak, Mich. | 250 |
| KDLM | Detroit Lakes, Minn. | 1000 |
| WEVE | Eveleth, Minn. | 1000 |
| KROC | Rochester, Minn. | 1000 |
| KWLM | Willmar, Minn. | 1000 |
| WJMB | Brookhaven, Miss. | 250 |
| WAML | Laurel, Miss. | 250 |
| KXEO | Mexico, Mo. | 250 |
| KLID | Poplar Bluff, Mo. | 250 |
| KSMO | Salem, Mo. | 250 |
| KICK | Springfield, Mo. | 250 |
| KCAP | Helena, Mont. | 250 |
| KPRK | Livingston, Mont. | 250 |
| KATL | Miles City, Mont. | 1000 |
| KQTE | Missoula, Mont. | 250 |
| KHUB | Fremont, Nebr. | 500 |
| KGFW | Kearney, Nebr. | 1000 |
| KSID | Sidney, Nebr. | 1000 |
| KORK | Las Vegas, Nev. | 250 |
| KBET | Reno, Nev. | 1000 |
| WDCR | Hanover, N.H. | 1000 |
| WMID | Atlantic City, N.J. | 1000 |
| KNDE | Aztec, N.Mex. | 1000 |
| KRRR | Ruidoso, N.Mex. | 250 |
| KKIT | Taos, N.Mex. | 250 |
| KSIL | Silver City, N.Mex. | 1000 |
| WMBO | Auburn, N.Y. | 1000 |
| WENT | Gloversville, N.Y. | 1000 |
| WXYJ | Jamestown, N.Y. | 250 |
| WUSJ | Lockport, N.Y. | 250 |
| WMSA | Massena, N.Y. | 1000 |
| WALL | Middletown, N.Y. | 1000 |
| WIRY | Plattsburgh, N.Y. | 1000 |
| WJRI | Lenoir, N.C. | 1000 |
| WTSB | Lumberton, N.C. | 1000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WOXF | Oxford, N.C. | 1000 |
| WOOW | Greenville, N.C. | 1000 |
| WGNI | Wilmington, N.C. | 1000 |
| WAIR | Winston-Salem, N.C. | 250 |
| KGPC | Grafton, N.Dak. | 1000 |
| WNCO | Ashland, Ohio | 250 |
| WOUB | Athens, Ohio | 250 |
| WIZE | Springfield, Ohio | 250 |
| WSTV | Steubenville, Ohio | 1000 |
| KIHN | Hugo, Okla. | 250 |
| KOCY | Okla. City, Okla. | 250 |
| KTOW | Sand Springs, Okla. | 250 |
| KWVR | Enterprise, Oreg. | 250 |
| KIHR | Hood River, Oreg. | 250 |
| KFIR | North Bend, Oreg. | 1000 |
| WCVI | Connellsville, Pa. | 250 |
| WSAJ | Grove City, Pa. | 100 |
| WKRZ | Oil City, Pa. | 1000 |
| WHAT | Philadelphia, Pa. | 1000 |
| WRAW | Reading, Pa. | 1000 |
| WTRN | Tyrone, Pa. | 250 |
| WBRE | Wilkes-Barre, Pa. | 1000 |
| WWPA | Williamsport, Pa. | 250 |
| WGRF | Aguadilla, P.R. | 250 |
| WOKE | Charleston, S.C. | 1000 |
| WRHI | Rock Hill, S.C. | 1000 |
| WSSC | Sumter, S.C. | 1000 |
| KIJV | Huron, S.D. | 250 |
| KRSD | Rapid City, S.Dak. | 1000 |
| WBAC | Cleveland, Tenn. | 250 |
| WKRM | Columbia, Tenn. | 1000 |
| WGRV | Greeneville, Tenn. | 250 |
| WKGN | Knoxville, Tenn. | 1000 |
| WHHM | Memphis, Tenn. | 250 |
| WCDT | Winchester, Tenn. | 1000 |
| KWKC | Abilene, Tex. | 250 |
| KTSL | Burnett, Tex. | 250 |
| KAND | Corsicana, Tex. | 250 |
| KSET | El Paso, Tex. | 250 |
| KDUB | Lubbock, Tex. | 250 |
| KRBA | Lufkin, Tex. | 250 |
| KPDN | Pampa, Tex. | 250 |
| KOLE | Port Arthur, Tex. | 250 |
| KTEO | San Angelo, Tex. | 250 |
| KVIC | N. of Victoria, Tex. | 250 |
| WTWN | St. Johnsbury, Vt. | 1000 |
| WSTA | Charlotte Amalie, V.I. | 250 |
| WKEY | Covington, Va. | 1000 |
| WHAP | Hopewell, Va. | 1000 |
| WJMA | Orange, Va. | 1000 |
| KAGT | Anacortes, Wash. | 250 |
| KPKW | Pasco, Wash. | 250 |
| KAPA | Raymond, Wash. | 250 |
| KMEL | Wenatchee, Wash. | 250 |
| WHAR | Clarksburg, W.Va. | 250 |
| WEPM | Martinsburg, W.Va. | 250 |
| WMON | Montgomery, W.Va. | 250 |
| WOVE | Welch, W.Va. | 1000 |
| WLDY | Ladysmith, Wis. | 1000 |
| WRIT | Milwaukee, Wis. | 250 |
| KYCN | Wheatland, Wyo. | 250 |
| KWOR | Worland, Wyo. | 250 |

### 1350—222.1

| | | |
|---|---|---|
| CHOV | Pembroke, Ont. | 1000 |
| CJLM | Joliette, Que. | 1000 |
| CKLB | Oshawa, Ont. | 10000 |
| CKEN | Kentville, N.S. | 1000 |
| WELB | Elba, Ala. | 1000d |
| WGAD | Gadsden, Ala. | 5000 |
| KLYD | Bakersfield, Calif. | 1000d |
| KCKC | San Bernardino, Calif. | 500 |
| KSRO | Santa Rosa, Calif. | 5000 |
| KGHF | Pueblo, Colo. | 5000 |
| WNLK | Norwalk, Conn. | 500 |
| WINY | Putnam, Conn. | 1000d |
| WEZY | Cocoa, Fla. | 1000 |
| WDCF | Dade City, Fla. | 1000d |
| WBSG | Blackshear, Ga. | 500d |
| WRWH | Cleveland, Ga. | 1000d |
| WRPB | Warner Robins, Ga. | 5000d |
| KRLC | Lewiston, Idaho | 5000 |
| WAAP | Peoria, Ill. | 1000 |
| WJBD | Salem, Ill. | 500d |
| WIOU | Kokomo, Ind. | 5000 |
| KRNT | Des Moines, Iowa | 5000 |
| KMAN | Manhattan, Kans. | 500d |
| WLOU | Louisville, Ky. | 5000d |
| WSMB | New Orleans, La. | 5000 |
| WDEA | Ellsworth, Me. | 1000d |
| WHMI | Howell, Mich. | 500 |
| KDIO | Ortonville, Minn. | 1000d |
| WCMP | Pine City, Minn. | 1000d |
| WKOZ | Kosciusko, Miss. | 5000d |
| KCHR | Charleston, Mo. | 1000d |
| KBRX | O'Neill, Nebr. | 1000d |
| WLNH | Laconia, N.H. | 5000d |
| WHWH | Princeton, N.J. | 5000 |
| KABQ | Albuquerque, N.M. | 5000 |
| WCBA | Corning, N.Y. | 1000d |
| WRNY | Rome, N.Y. | 500d |
| WBMT | Black Mountain, N.C. | 500d |
| WHIP | Mooresville, N.C. | 1000d |
| WLLY | Wilson, N.C. | 1000d |
| KQDI | Bismarck, N.D. | 500d |
| WADC | Akron, Ohio | 5000 |
| WCHI | Chillicothe, Ohio | 500d |
| KRHD | Duncan, Okla. | 250 |
| KTLQ | Tahlequah, Okla. | 1000d |
| KRVC | Ashland, Oreg. | 1000d |
| KLOO | Corvallis, Oreg. | 1000d |
| WORK | York, Pa. | 5000 |
| WDAR | Darlington, S.C. | 1000d |
| WGSW | Greenwood, S.C. | 1000d |
| WRKM | Carthage, Tenn. | 500d |
| KCAR | Clarksville, Tex. | 500d |
| KTXJ | Jasper, Tex. | 1000d |
| KCOR | San Antonio, Tex. | 5000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WBLT | Bedford, Va. | 1000d |
| WFLS | Fredericksburg, Va. | 500d |
| WNVA | Norton, Va. | 5000d |
| WAVY | Portsmouth, Va. | 5000 |
| WPDR | Portage, Wis. | 1000d |

### 1360—220.4

| | | |
|---|---|---|
| WWWB | Jasper, Ala. | 1000d |
| WLIQ | Mobile, Ala. | 5000d |
| WMFC | Monroeville, Ala. | 1000d |
| WELR | Roanoke, Ala. | 1000d |
| KRUX | Glendale, Ariz. | 5000 |
| KLYR | Clarksville, Ark. | 500d |
| KFFA | Helena, Ark. | 1000 |
| KFIV | Modesto, Calif. | 1000 |
| KRCK | Ridgecrest, Calif. | 1000d |
| KGB | San Diego, Calif. | 5000 |
| WDRC | Hartford, Conn. | 5000 |
| WOBS | Jacksonville, Fla. | 5000d |
| WKAT | Miami Beach, Fla. | 5000 |
| WSFR | Sanford, Fla. | 500d |
| WINT | Winter Haven, Fla. | 1000d |
| WAZA | Bainbridge, Ga. | 1000d |
| WLAW | Lawrenceville, Ga. | 1000d |
| WMAC | Metter, Ga. | 500d |
| WLBK | DeKalb, Ill. | 1000d |
| WVMC | Mt. Carmel, Ill. | 500d |
| WGFA | Watseka, Ill. | 1000d |
| KXGI | Ft. Madison, Iowa | 1000d |
| KSCJ | Sioux City, Iowa | 5000 |
| KBTO | El Dorado, Kans. | 500d |
| WFLW | Monticello, Ky. | 1000d |
| KDBC | Mansfield, La. | 1000d |
| KVIM | New Iberia, La. | 1000d |
| KTLD | Tallulah, La. | 500d |
| WEBB | Dundalk, Md. | 5000d |
| WLYN | Lynn, Mass. | 1000d |
| WWRO | Caro, Mich. | 5000 |
| WKMI | Kalamazoo, Mich. | 5000 |
| KLRS | Mountain Grove, Mo. | 1000d |
| KWRV | McCook, Nebr. | 1000d |
| WNNJ | Newton, N.J. | 1000d |
| WWBZ | Vineland, N.J. | 1000 |
| WKOP | Binghamton, N.Y. | 5000 |
| WMNS | Olean, N.Y. | 1000d |
| WCHL | Chapel Hill, N.C. | 1000d |
| KEYZ | Williston, N.D. | 5000 |
| WSAI | Cincinnati, Ohio | 5000 |
| WWOW | Conneaut, Ohio | 500d |
| KUIK | Hillsboro, Oreg. | 1000d |
| WPQR | McKeesport, Pa. | 5000 |
| WPPA | Pottsville, Pa. | 1000 |
| WELP | Easley, S.C. | 1000d |
| WLCM | Lancaster, S.C. | 1000d |
| WNAH | Nashville, Tenn. | 1000d |
| KRAY | Amarillo, Tex. | 500d |
| KACT | Andrews, Tex. | 1000d |
| KWBA | Baytown, Tex. | 1000 |
| KRYS | Corpus Christi, Tex. | 1000 |
| KXOL | Ft. Worth, Tex. | 5000 |
| WBOB | Galax, Va. | 1000d |
| WHBG | Harrisonburg, Va. | 5000d |
| KFDR | Grand Coulee, Wash. | 1000d |
| KMO | Tacoma, Wash. | 5000 |
| WHJC | Matawan, W.Va. | 1000d |
| WMOV | Ravenswood, W.Va. | 1000d |
| WBAY | Green Bay, Wis. | 5000 |
| WISV | Virouqua, Wis. | 500d |
| WMNE | Menomonie, Wis. | 1000d |
| KVRS | Rock Springs, Wyo. | 1000 |

### 1370—218.8

| | | |
|---|---|---|
| WBYE | Calera, Ala. | 1000d |
| CFLV | Valleyfield, P.Q. | 1000 |
| KTPA | Prescott, Ark. | 500d |
| KBUC | Corona, Calif. | 1000 |
| KEEN | San Jose, Calif. | 5000 |
| KGEN | Tulare, Calif. | 1000d |
| WKMK | Blountstown, Fla. | 500d |
| WKOS | Ocala, Fla. | 5000d |
| WCOA | Pensacola, Fla. | 5000 |
| WAXE | Vero Beach, Fla. | 1000d |
| WBGR | Jesup, Ga. | 5000 |
| WFDR | Manchester, Ga. | 1000d |
| WKLE | Washington, Ga. | 1000d |
| WPRC | Lincoln, Ill. | 1000d |
| WTTS | Bloomington, Ind. | 5000 |
| WGRY | Gary, Ind. | 1000d |
| KDTH | Dubuque, Iowa | 5000 |
| KGNO | Dodge City, Kans. | 5000 |
| KALN | Iola, Kans. | 500d |
| WGOH | Grayson, Ky. | 5000d |
| WTKY | Tompkinsville, Ky. | 1000d |
| KAPB | Marksville, La. | 1000d |
| WMHI | Braddocks Hts., Md. | 500d |
| WKIK | Leonardtown, Md. | 1000d |
| WGHN | Grand Haven, Mich. | 500d |
| KSUM | Fairmont, Minn. | 1000 |
| WDOB | Canton, Miss. | 1000d |
| KWRT | Boonville, Mo. | 1000d |
| KCRV | Caruthersville, Mo. | 1000d |
| KXLF | Butte, Mont. | 5000 |
| KAWL | York, Nebr. | 500d |
| WFEA | Manchester, N.H. | 5000 |
| WALK | Patchogue, N.Y. | 500d |
| WSAY | Rochester, N.Y. | 5000 |
| WLTC | Gastonia, N.C. | 1000d |
| WTAB | Tabor City, N.C. | 5000d |
| KFJM | Grand Forks, N.D. | 1000d |
| WSPO | Toledo, Ohio | 5000 |
| KAST | Astoria, Oreg. | 1000 |
| WOTR | Corry, Pa. | 1000 |
| WPAZ | Pottstown, Pa. | 1000d |
| WKMC | Roaring Sprgs., Pa. | 1000d |
| WIVV | Vieques, P.R. | 1000 |
| WKFD | Wickford, R.I. | 500d |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WDEF | Chattanooga, Tenn. | 5000 |
| WDXE | Lawrenceburg, Tenn. | 1000d |
| WRGS | Rogersville, Tenn. | 1000d |
| KOKE | Austin, Tex. | 1000d |
| KFRO | Longview, Tex. | 1000 |
| KUKO | Post, Tex. | 500d |
| KSOP | Salt Lake City, Utah | 1000d |
| WBTN | Bennington, Vt. | 1000d |
| WHEE | Martinsville, Va. | 5000d |
| WJWS | South Hill, Va. | 5000d |
| KPOR | Quincy, Wash. | 1000d |
| WMOD | Moundsville, W.Va. | 1000d |
| WCCN | Neillsville, Wis. | 5000d |
| KVWO | Cheyenne, Wyo. | 1000 |

### 1380—217.3

| | | |
|---|---|---|
| CFOA | Victoriaville, Que. | 1000 |
| CKPC | Brantford, Ont. | 10000 |
| CKLC | Kingston, Ont. | 5000 |
| WRAB | Arab, Ala. | 1000d |
| WGYV | Greenville, Ala. | 1000d |
| KDXE | N. Little Rock, Ark. | 1000d |
| KBVM | Lancaster, Calif. | 1000d |
| KGMS | Sacramento, Calif. | 1000 |
| KSBW | Salinas, Calif. | 5000 |
| KFLJ | Walsenburg, Colo. | 1000d |
| WAMS | Wilmington, Del. | 5000 |
| WLIZ | Lake Worth, Fla. | 500d |
| WQXQ | Ormond Bch., Fla. | 1000d |
| WLCY | St. Petersburg, Fla. | 5000 |
| WAOK | Atlanta, Ga. | 5000 |
| WSIZ | Ocilla, Ga. | 5000d |
| KPOI | Honolulu, Hawaii | 5000 |
| WBEL | South Beloit, Ill. | 5000 |
| WITE | Brazil, Ind. | 500d |
| WKJG | Ft. Wayne, Ind. | 5000 |
| KCIM | Carroll, Iowa | 1000 |
| KHAK | Cedar Rapids, Iowa | 1000 |
| KCII | Washington, Iowa | 500d |
| WMTA | Central City, Ky. | 500d |
| WWKY | Winchester, Ky. | 1000d |
| WYNK | Baton Rouge, La. | 500d |
| WKTJ | Farmington, Me. | 1000d |
| WTTH | Port Huron, Mich. | 1000 |
| WPLB | Greenville, Mich. | 500d |
| KLIZ | Brainerd, Minn. | 1000d |
| KAGE | Winona, Minn. | 1000 |
| WOLT | Indianola, Miss. | 500d |
| KUDL | Kansas City, Mo. | 1000d |
| KWK | St. Louis, Mo. | 5000 |
| KUVR | Holdrege, Nebr. | 500 |
| WBBX | Portsmouth, N.H. | 1000 |
| WAWZ | Zarephath, N.J. | 5000 |
| WBNX | New York, N.Y. | 5000 |
| WLOS | Asheville, N.C. | 5000 |
| WTOB | Winston-Salem, N.C. | 5000 |
| WWIZ | Lorain, Ohio | 500d |
| WPKO | Waverly, Ohio | 1000d |
| KSWO | Lawton, Okla. | 1000 |
| KMUS | Muskogee, Okla. | 1000 |
| KBCH | Ocean Lake, Oreg. | 1000d |
| KSRV | Ontario, Oreg. | 5000 |
| WACB | Kittanning, Pa. | 1000d |
| WMLP | Milton, Pa. | 1000d |
| WAYZ | Waynesboro, Pa. | 1000d |
| WNRI | Woonsocket, R.I. | 1000d |
| WAGS | Bishopville, S.C. | 1000d |
| WGUS | N. Augusta, S.C. | 1000d |
| KOTA | Rapid City, S.Dak. | 5000 |
| WYSH | Clinton, Tenn. | 1000d |
| WGMM | Millington, Tenn. | 500d |
| KJET | Beaumont, Tex. | 1000 |
| KBWD | Brownwood, Tex. | 1000 |
| KCRM | Crane, Tex. | 1000d |
| KTSM | El Paso, Tex. | 1000 |
| KMUL | Muleshoe, Tex. | 1000d |
| KBOP | Pleasanton, Tex. | 1000d |
| WSYB | Rutland, Vt. | 5000 |
| WMBG | Richmond, Va. | 5000 |
| KRKO | Everett, Wash. | 5000 |
| KPEG | Spokane, Wash. | 5000d |
| WBEL | Beloit, Wis. | 5000 |

### 1390—215.7

| | | |
|---|---|---|
| CKLN | Nelson, B.C. | 1000 |
| WHMA | Anniston, Ala. | 5000 |
| KDQN | DeQueen, Ark. | 500d |
| KAMO | Rogers, Ark. | 1000d |
| KGER | Long Beach, Calif. | 5000 |
| KCEY | Turlock, Calif. | 5000 |
| KFML | Denver, Colo. | 1000d |
| WAVP | Avon Park, Fla. | 1000d |
| WPUP | Gainesville, Fla. | 5000d |
| WGES | Chicago, Ill. | 5000 |
| WFIW | Fairfield, Ill. | 1000 |
| WJCD | Seymour, Ind. | 1000d |
| KCLN | Clinton, Iowa | 1000d |
| KCBC | Des Moines, Iowa | 1000 |
| KNCK | Concordia, Kans. | 500d |
| WANY | Albany, Ky. | 1000d |
| WKIC | Hazard, Ky. | 5000d |
| KFRA | Franklin, La. | 500d |
| KNOE | Monroe, La. | 5000 |
| WEGP | Presque Isle, Me. | 5000d |
| WCAT | Orange, Mass. | 1000d |
| WPLM | Plymouth, Mass. | 5000 |
| WCER | Charlotte, Mich. | 1000d |
| KAOH | Duluth, Minn. | 500 |
| KRFO | Owatonna, Minn. | 500d |
| WROA | Gulfport, Miss. | 1000d |
| WQIC | Meridian, Miss. | 5000d |
| KJPW | Waynesville, Mo. | 1000d |
| KENN | Farmington, N.Mex. | 5000 |
| KHOB | Hobbs, N.Mex. | 5000d |
| WEOK | Poughkeepsie, N.Y. | 5000d |
| WRIV | Riverhead, N.Y. | 1000d |
| WFBL | Syracuse, N.Y. | 5000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WKRK | Murphy, N.C. | 1000d |
| WEEO | Rocky Mount, N.C. | 5000 |
| WADA | Shelby, N.C. | 500d |
| WJRM | Troy, N.C. | 500d |
| KLPM | Minot, N.Dak. | 5000 |
| WOHP | Bellefontaine, Ohio | 500d |
| WMPO | Middleport-Pomroy, Ohio | 1000d |
| WFMJ | Youngstown, Ohio | 5000 |
| KCRC | Enid, Okla. | 1000 |
| KSLM | Salem, Oreg. | 5000 |
| WLAN | Lancaster, Pa. | 1000 |
| WRSC | State College, Pa. | 500d |
| WISA | Isabella, P.R. | 1000 |
| WHPB | Belton, S.C. | 500d |
| WCSC | Charleston, S.C. | 5000 |
| KJAM | Madison, S.D. | 5000d |
| WTJS | Jackson, Tenn. | 5000 |
| KULP | El Campo, Tex. | 500d |
| KBEC | Waxahachie, Tex. | 500d |
| KLGN | Logan, Utah | 1000 |
| WEAM | Arlington, Va. | 5000 |
| WWOD | Lynchburg, Va. | 5000 |
| KLOQ | Yakima, Wash. | 1000 |

### 1400—214.2

| | | |
|---|---|---|
| CKBC | Bathurst, N.B. | 250 |
| CKDH | Amherst, N.S. | 250 |
| CJFP | Riviere-du-Loup, Que. | 1000 |
| CKRN | Rouyn, Que. | 250 |
| CKSW | Swift Current, Sask. | 1000 |
| WMSL | Decatur, Ala. | 250 |
| WXAL | Demopolis, Ala. | 250 |
| WFPA | Ft. Payne, Ala. | 250 |
| WJLD | Homewood, Ala. | 1000 |
| WJHO | Opelika, Ala. | 1000 |
| KSEW | Sitka, Alaska | 250 |
| KCLF | Clifton, Ariz. | 250 |
| KXIV | Phoenix, Ariz. | 250 |
| KTUC | Tucson, Ariz. | 250 |
| KVOY | Yuma, Ariz. | 250 |
| KELD | El Dorado, Ark. | 1000 |
| KCLA | Pine Bluff, Ark. | 1000 |
| KWYN | Wynne, Ark. | 1000 |
| KRE | Berkeley, Calif. | 1000 |
| KREO | Indio, Calif. | 250 |
| KQMS | Redding, Calif. | 250 |
| KSLY | San Luis Obispo, Cal. | 250 |
| KSPA | Santa Paula, Calif. | 250 |
| KHOE | Truckee, Calif. | 1000 |
| KUKI | Ukiah, Calif. | 1000 |
| KONG | Visalia, Calif. | 250 |
| KRLN | Canon City, Colo. | 250 |
| KDTA | Delta, Colo. | 250 |
| KFTM | Ft. Morgan, Colo. | 250 |
| KBZZ | La Junta, Colo. | 250 |
| WSTC | Stamford, Conn. | 1000 |
| WILI | Willimantic, Conn. | 1000 |
| WFTL | Ft. Lauderdale, Fla. | 250 |
| WIRA | Ft. Pierce, Fla. | 250 |
| WRHC | Jacksonville, Fla. | 250 |
| WPRY | Perry, Fla. | 250 |
| WTRR | Sanford, Fla. | 1000 |
| WZRH | Zephyr Hills, Fla. | 250 |
| WCQS | Alma, Ga. | 1000 |
| WSGC | Elberton, Ga. | 1000 |
| WNEX | Macon, Ga. | 1000 |
| WMGA | Moultrie, Ga. | 1000 |
| WCOH | Newnan, Ga. | 1000 |
| WGSA | Savannah, Ga. | 1000 |
| KART | Jerome, Idaho | 250 |
| KRPL | Moscow, Idaho | 250 |
| KSPT | Sandpoint, Idaho | 250 |
| WDWS | Champaign, Ill. | 1000 |
| WGIL | Galesburg, Ill. | 1000 |
| WROZ | Evansville, Ind. | 1000 |
| WBAT | Marion, Ind. | 500 |
| KCOG | Centerville, Iowa | 100 |
| KVFD | Fort Dodge, Iowa | 250 |
| KVOE | Emporia, Kans. | 250 |
| KAYS | Hays, Kans. | 250 |
| WCYN | Cynthiana, Ky. | 250 |
| WIEL | Elizabethtown, Ky. | 1000 |
| WFTG | London, Ky. | 250 |
| WFPR | Hammond, La. | 250 |
| KAOK | Lake Charles, La. | 250 |
| WRDO | Augusta, Maine | 250 |
| WIDE | Biddeford, Maine | 1000 |
| WWIN | Baltimore, Md. | 250 |
| WALE | Fall River, Mass. | 5000 |
| WLLH | Lowell, Mass. | 500 |
| WHMP | Northampton, Mass. | 1000 |
| WELL | Battle Creek, Mich. | 250 |
| WJLB | Detroit, Mich. | 250 |
| WHDF | Houghton, Mich. | 250 |
| WMAB | Munising, Mich. | 250 |
| WSAM | Saginaw, Mich. | 250 |
| WSJM | St. Joseph, Mich. | 250 |
| WTCM | Traverse City, Mich. | 250 |
| KEYL | Long Prairie, Minn. | 250 |
| KMHL | Marshall, Minn. | 250 |
| WMIN | Mpls.-St. Paul, Minn. | 1000 |
| WHLB | Virginia, Minn. | 1000 |
| WBIP | Booneville, Miss. | 250 |
| WNAG | Grenada, Miss. | 250 |
| WFOR | Hattiesburg, Miss. | 250 |
| WJQS | Jackson, Miss. | 250 |
| WMBC | Macon, Miss. | 250 |
| KFRU | Columbia, Mo. | 1000 |
| KJCF | Festus, Mo. | 250 |
| KSIM | Sikeston, Mo. | 250 |
| KTTS | Springfield, Mo. | 1000 |
| KXGN | Glendive, Mont. | 250 |
| KARR | Great Falls, Mont. | 1000 |
| KCOW | Alliance, Nebr. | 250 |
| KLIN | Lincoln, Nebr. | 250 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| KBMI | Henderson, Nev. | 250 |
| KWNA | Winnemucca, Nev. | 1000 |
| WTSL | Hanover, N.H. | 1000 |
| KTRC | Santa Fe, N.Mex. | 250 |
| KCHS | Truth or Consequences, New Mexico | 250 |
| KTNM | Tucumcari, N.Mex. | 250 |
| WOND | Pleasantville, N.J. | 1000 |
| WABY | Albany, N.Y. | 1000 |
| WYSL | Buffalo, N.Y. | 250 |
| WSLB | Ogdensburg, N.Y. | 1000 |
| WBMA | Beaufort, N.C. | 250 |
| WGBG | Greensboro, N.C. | 1000 |
| WSIC | Statesville, N.C. | 1000 |
| WLSE | Wallace, N.C. | 250 |
| WHCC | Waynesville, N.C. | 1000 |
| WCNF | Weldon, N.C. | 250 |
| KEYJ | Jamestown, N.Dak. | 1000 |
| WMAN | Mansfield, Ohio | 250 |
| WPAY | Portsmouth, Ohio | 1000 |
| KWON | Bartlesville, Okla. | 250 |
| KTMC | McAlester, Okla. | 250 |
| KNOR | Norman, Okla. | 250 |
| KNND | Cottage Grove, Oreg. | 250 |
| WEST | Easton, Pa. | 250 |
| WJET | Erie, Pa. | 250 |
| WHGB | Harrisburg, Pa. | 250 |
| WKBI | St. Marys, Pa. | 1000 |
| WICK | Scranton, Pa. | 250 |
| WRAK | Williamsport, Pa. | 1000 |
| WCOS | Columbia, S.C. | 1000 |
| WGTN | Georgetown, S.C. | 250 |
| WZOO | Spartanburg, S.C. | 250 |
| WJZM | Clarksville, Tenn. | 1000 |
| WHUB | Cookeville, Tenn. | 1000 |
| WLSB | Copper Hill, Tenn. | 250 |
| WGAP | Maryville, Tenn. | 1000 |
| WHAL | Shelbyville, Tenn. | 1000 |
| KRUN | Ballinger, Tex. | 250 |
| KBYG | Big Spring, Tex. | 250 |
| KUNO | Corpus Christi, Tex. | 250 |
| KILE | nr. Galveston, Tex. | 250 |
| KGVL | Greenville, Tex. | 250 |
| KEBE | Jacksonville, Tex. | 250 |
| KIUN | Pecos, Tex. | 1000 |
| KEYE | Perryton, Tex. | 250 |
| KVOP | Plainview, Tex. | 250 |
| KDWT | Stamford, Tex. | 250 |
| KTEM | Temple, Tex. | 250 |
| KTFS | Texarkana, Tex. | 250 |
| KVOU | Uvalde, Tex. | 250 |
| KIXX | Provo, Utah | 250 |
| WDOT | Burlington, Vt. | 250 |
| WINA | Charlottesville, Va. | 1000 |
| WHHV | Hillsville, Va. | 250 |
| WHIH | Portsmouth, Va. | 250 |
| WHLF | So. Boston, Va. | 1000 |
| WINC | Winchester, Va. | 1000 |
| KEDO | Longview, Wash. | 250 |
| KRSC | Othello, Wash. | 250 |
| KTNT | Tacoma, Wash. | 1000 |
| WBOY | Clarkesburg, W.Va. | 1000 |
| WRON | Ronceverte, W.Va. | 1000 |
| WSPZ | Spencer, W.Va. | 1000 |
| WKWK | Wheeling, W.Va. | 250 |
| WBTH | Williamson, W.Va. | 1000 |
| WATW | Ashland, Wis. | 1000 |
| WBIZ | Eau Claire, Wis. | 1000 |
| WDUZ | Green Bay, Wis. | 250 |
| WRJN | Racine, Wis. | 250 |
| WRDB | Reedsburg, Wis. | 250 |
| WRIG | Wausau, Wis. | 250 |
| KATI | Caspar, Wyo. | 1000 |
| KODI | Cody, Wyo. | 1000 |

## 1410—212.6

| | | |
|---|---|---|
| CFUN | Vancouver, B.C. | 10000 |
| CHLP | Montreal, Que. | 10000 |
| WALA | Mobile, Ala. | 5000 |
| WRCK | Tuscumbia, Ala. | 500d |
| KTCS | Fort Smith, Ark. | 1000 |
| KERN | Bakersfield, Calif. | 1000 |
| KRML | Carmel, Calif. | 500d |
| KKOK | Lompoc, Calif. | 500d |
| KMYC | Marysville, Calif. | 5000 |
| KCAL | Redlands, Calif. | 1000d |
| KCOL | Ft. Collins, Colo. | 1000 |
| WPOP | Hartford, Conn. | 5000 |
| WDOV | Dover, Del. | 5000d |
| WMYR | Fort Myers, Fla. | 5000 |
| WBIL | Leesburg, Fla. | 1000d |
| WRFB | Tallahassee, Fla. | 5000d |
| WRIX | Griffin, Ga. | 1000d |
| WSNE | Cummings, Ga. | 1000d |
| WDAX | McRae, Ga. | 1000d |
| WLAQ | Rome, Ga. | 1000 |
| WRMN | Elgin, Ill. | 1000d |
| WTIM | Taylorville, Ill. | 1000d |
| WAZY | Lafayette, Ind. | 1000d |
| KGRN | Grinnell, Iowa | 500d |
| KLEM | LeMars, Iowa | 1000d |
| KCLO | Leavenworth, Kans. | 5000d |
| KWBB | Wichita, Kans. | 5000 |
| WLBJ | Bowling Green, Ky. | 5000 |
| WHLN | Harlan, Ky. | 5000d |
| KDBS | Alexandria, La. | 1000d |
| WDDW | Halfway, Md. | 1000d |
| WOKW | Brockton, Mass. | 1000d |
| WGRD | Grand Rap., Mich. | 1000d |
| KLFD | Litchfield, Minn. | 500d |
| WDSK | Cleveland, Miss. | 1000d |
| WBKN | Newton, Miss. | 500d |
| WHTG | Eatontown, N.J. | 500d |
| WDOE | Dunkirk, N.Y. | 500 |
| WELM | Elmira, N.Y. | 1000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WSET | Glen Falls, N.Y. | 1000d |
| WOTT | Watertown, N.Y. | 5000 |
| WEGO | Concord, N.C. | 1000d |
| WSRC | Durham, N.C. | 1000d |
| WING | Dayton, Ohio | 5000 |
| KPAM | Portland, Oreg. | 5000d |
| WLSH | Lansford, Pa. | 5000d |
| KQV | Pittsburgh, Pa. | 5000 |
| WPCC | Clinton, S.C. | 1000d |
| WYMB | Manning, S.C. | 1000d |
| WCMT | Martin, Tenn. | 1000d |
| KBUD | Athens, Tex. | 1000d |
| KBAN | Bowie, Tex. | 500d |
| KVLB | Cleveland, Tex. | 500 |
| KXIT | Dalhart, Tex. | 500d |
| KADO | Marshall, Tex. | 500 |
| KRIG | Odessa, Tex. | 1000 |
| KBAL | San Saba, Tex. | 500d |
| KNAL | Victoria, Tex. | 500 |
| WRIS | Roanoke, Va. | 5000d |
| WKBH | LaCrosse, Wis. | 5000 |
| KWYO | Sheridan, Wyo. | 1000 |

## 1420—211.1

| | | |
|---|---|---|
| CKPT | Peterborough, Ont. | 1000 |
| CJMT | Chicoutimi, Que. | 1000 |
| WACT | Tuscaloosa, Ala. | 5000d |
| KHFH | Sierra Vista, Ariz. | 1000d |
| KPOC | Pocahontas, Ark. | 1000d |
| KSTN | Stockton, Calif. | 5000 |
| WLIS | Old Saybrook, Conn. | 500d |
| WBRD | Bradenton, Fla. | 1000 |
| WDBF | Delray Beach, Fla. | 5000d |
| WETH | St. Augustine, Fla. | 1000d |
| WRFB | Tallahassee, Fla. | 5000d |
| WAVO | Avondale Estates, Ga. | 1000d |
| WRBL | Columbus, Ga. | 5000 |
| WPEH | Louisville, Ga. | 1000d |
| WLET | Toccoa, Ga. | 5000d |
| WINI | Murphysboro, Ill. | 500d |
| WIMS | Michigan City, Ind. | 5000d |
| WOC | Davenport, Iowa | 5000 |
| KJCK | Junction City, Kans. | 1000d |
| WTCR | Ashland, Ky. | 5000d |
| WHBN | Harrodsburg, Ky. | 1000d |
| WVJS | Owensboro, Ky. | 5000 |
| KPEL | Lafayette, La. | 1000 |
| WOKW | Brockton, Mass. | 1000d |
| WBSM | New Bedford, Mass. | 5000 |
| WBEC | Pittsfield, Mass. | 1000 |
| WAMM | Flint, Mich. | 1000d |
| WKPR | Kalamazoo, Mich. | 1000d |
| KTOE | Mankato, Minn. | 5000 |
| WSUH | Oxford, Miss. | 1000d |
| WQBC | Vicksburg, Miss. | 1000 |
| KBTN | Neosho, Mo. | 500d |
| KOOO | Omaha, Nebr. | 1000d |
| KSYX | Santa Rosa, N.Mex. | 1000d |
| WALY | Herkimer, N.Y. | 1000d |
| WACK | Newark, N.Y. | 500 |
| WLNA | Peekskill, N.Y. | 1000d |
| WMYN | Mayodan, N.C. | 500 |
| WGAS | S. Gastonia, N.C. | 500d |
| WVOT | Wilson, N.C. | 1000 |
| WHK | Cleveland, Ohio | 5000 |
| KTJS | Hobart, Okla. | 1000d |
| KYNG | Coos Bay, Oreg. | 1000d |
| WCOJ | Coatesville, Pa. | 5000 |
| WCED | DuBois, Pa. | 5000 |
| WEUC | Ponce, P.R. | 1000 |
| WCRE | Cheraw, S.C. | 1000d |
| KABR | Aberdeen, S.D. | 1000d |
| WEMB | Erwin, Tenn. | 5000d |
| WKSR | Pulaski, Tenn. | 1000 |
| KFYN | Bonham, Tex. | 250d |
| KTRE | Lufkin, Tex. | 1000 |
| KGNB | New Braunfels, Tex. | 1000d |
| KPEP | San Angelo, Tex. | 1000d |
| WWSR | St. Albans, Vt. | 1000d |
| WDDY | Gloucester, Va. | 1000d |
| WKCW | Warrenton, Va. | 5000d |
| KITI | Chehalis, Wash. | 1000d |
| KUJ | Walla Walla, Wash. | 5000 |
| WPLY | Plymouth, Wis. | 500d |

## 1430—209.7

| | | |
|---|---|---|
| CKFH | Toronto, Ont. | 10000 |
| WFHK | Pell City, Ala. | 1000d |
| KHBM | Monticello, Ark. | 1000d |
| KAMP | El Centro, Calif. | 1000d |
| KARM | Fresno, Calif. | 5000 |
| KALI | Pasadena, Calif. | 5000 |
| KOSI | Aurora, Colo. | 5000 |
| WSDB | Homestead, Fla. | 500d |
| WLAK | Lakeland, Fla. | 5000 |
| WPCF | Panama City, Fla. | 5000 |
| WGFS | Covington, Ga. | 1000d |
| WRCD | Dalton, Ga. | 1000d |
| WWGS | Tifton, Ga. | 5000 |
| WCMY | Ottawa, Ill. | 500d |
| WIRE | Indianapolis, Ind. | 5000 |
| KASI | Ames, Iowa | 1000d |
| KMRC | Morgan City, La. | 500d |
| WNAV | Annapolis, Md. | 5000 |
| WHIL | Medford, Mass. | 5000d |
| WION | Ionia, Mich. | 5000d |
| WBRB | Mt. Clemens, Mich. | 500d |
| WLAU | Laurel, Miss. | 5000d |
| KAOL | Carrollton, Mo. | 500d |
| WIL | St. Louis, Mo. | 5000 |
| KRGI | Grand Island, Nebr. | 1000 |
| WNJR | Newark, N.J. | 5000 |
| KGFL | Roswell, N.M. | 5000d |
| WENE | Endicott, N.Y. | 5000 |
| WMNC | Morganton, N.C. | 5000d |
| WDJS | Mt. Olive, N.C. | 1000d |
| WRXO | Roxboro, N.C. | 1000d |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WFOB | Fostoria, Ohio | 1000 |
| WCLT | Newark, Ohio | 500d |
| KALV | Alva, Okla. | 500 |
| KELI | Tulsa, Okla. | 5000 |
| KGAY | Salem, Oreg. | 5000d |
| WVAM | Altoona, Pa. | 1000 |
| WFRA | Franklin, Pa. | 500d |
| WNEL | Caguas, P.R. | 1000 |
| WBLR | Batesburg, S.C. | 5000d |
| WATP | Marion, S.C. | 1000d |
| KBRK | Brookings, S. Dak. | 1000d |
| WFCT | Fountain City, Tenn. | 1000d |
| WENO | Madison, Tenn. | 5000d |
| WHER | Memphis, Tenn. | 1000 |
| KSTB | Breckenridge, Tex. | 1000d |
| KEES | Gladewater, Tex. | 1000d |
| KCOH | Houston, Tex. | 1000d |
| KLO | Ogden, Utah | 5000 |
| WIVE | Ashland, Va. | 1000d |
| WDIC | Clincho, Va. | 1000d |
| KBRC | Mt. Vernon, Wash. | 5000 |
| WEIR | Weirton, W.Va. | 1000 |
| WBEV | Beaver Dam, Wis. | 1000d |

## 1440—208.2

| | | |
|---|---|---|
| CFCP | Courtenay, B.C. | 1000 |
| WHHY | Montgomery, Ala. | 5000 |
| KWBY | Scottsdale, Ariz. | 5000d |
| KHOG | Fayetteville, Ark. | 1000d |
| KOKY | Little Rock, Ark. | 5000d |
| KVON | Napa, Calif. | 500 |
| KPRO | Riverside, Calif. | 1000 |
| KCOY | Santa Maria, Calif. | 1000 |
| WBIS | Bristol, Conn. | 500d |
| WABR | Winter Park, Fla. | 5000 |
| WWCC | Bremen, Ga. | 1000d |
| WGIG | Brunswick, Ga. | 5000 |
| WRAJ | Anna, Ill. | 500d |
| WIOK | Normal, Ill. | 1000 |
| WPRS | Paris, Ill. | 1000d |
| WGEM | Quincy, Ill. | 1000 |
| WROK | Rockford, Ill. | 5000 |
| WPGW | Portland, Ind. | 500d |
| KCHE | Cherokee, Iowa | 500d |
| KEWI | Topeka, Kans. | 5000 |
| WKLX | Paris, Ky. | 1000d |
| WEZJ | Williamsburg, Ky. | 1000d |
| KMLB | Monroe, La. | 5000 |
| WJAB | Westbrook, Me. | 5000d |
| WAAB | Worcester, Mass. | 5000 |
| WBCM | Bay City, Mich. | 1000 |
| WDOW | Dowagiac, Mich. | 500d |
| WCHB | Inkster, Mich. | 1000d |
| KEVE | Golden Valley, Minn. | 5000 |
| WHHT | Lucedale, Miss. | 1000d |
| WSEL | Pontotoc, Miss. | 1000d |
| WMVB | Millville, N.J. | 1000d |
| WBAB | Babylon, N.Y. | 1000d |
| WJJL | Niagara Falls, N.Y. | 1000d |
| WSGO | Oswego, N.Y. | 1000d |
| WBLA | Elizabethtown, N.C. | 1000d |
| WBUY | Lexington, N.C. | 5000d |
| KILO | Grand Forks, N.D. | 1000 |
| WHHH | Warren, Ohio | 5000 |
| KMED | Medford, Oreg. | 5000 |
| KODL | The Dalles, Oreg. | 1000 |
| WCDL | Carbondale, Pa. | 5000d |
| WNPV | Lansdale, Pa. | 500d |
| WGCB | Red Lion, Pa. | 1000d |
| WQOK | Greenville, S.C. | 5000 |
| WZYX | Cowan, Tenn. | 1000d |
| WHDM | McKenzie, Tenn. | 500d |
| KFDA | Amarillo, Tex. | 5000 |
| KEYS | Corpus Christi, Tex. | 1000 |
| KDNT | Denton, Tex. | 5000 |
| KETX | Livingston, Tex. | 5000d |
| WKLV | Blackstone, Va. | 5000d |
| WHIS | Bluefield, W.Va. | 5000 |
| WAJR | Morgantown, W.Va. | 5000 |
| WJPG | Green Bay, Wis. | 5000 |

## 1450—206.8

| | | |
|---|---|---|
| CFBM | Brochet, Man. | 100 |
| CBG | Gander, Nfld. | 250 |
| CFAB | Windsor, N.S. | 250 |
| CFJR | Brockville, Ont. | 1000 |
| CHEF | Granby, P.Q. | 1000 |
| WDNG | Anniston, Ala. | 1000 |
| WYAM | Bessemer, Ala. | 1000 |
| WDIG | Dothan, Ala. | 1000 |
| WFIX | Huntsville, Ala. | 250 |
| WLAY | Muscle Shoals City, Alabama | 1000 |
| KLAM | Cordova, Alaska | 250 |
| KAWT | Douglas, Ariz. | 250 |
| KNOT | Prescott, Ariz. | 250 |
| KOLD | Tucson, Ariz. | 250 |
| KENA | Mena, Ark. | 250 |
| KYOR | Blythe, Calif. | 250 |
| KOWN | Escondido, Calif. | 250 |
| KPAL | Palm Springs, Calif. | 250 |
| KTIP | Porterville, Calif. | 250 |
| KSAN | San Francisco, Calif. | 250 |
| KVML | Sonora, Calif. | 250 |
| KVEN | Ventura, Calif. | 1000 |
| KAGR | Yuba City, Calif. | 100 |
| KGIW | Alamosa, Colo. | 250 |
| KYOU | Greeley, Colo. | 1000 |
| WNAB | Bridgeport, Conn. | 250 |
| WILM | Wilmington, Del. | 250 |
| WOL | Washington, D.C. | 250 |
| WWJB | Brooksville, Fla. | 250 |
| WMFJ | Daytona Beach, Fla. | 1000 |
| WSKP | Miami, Fla. | 250 |
| WBSR | Pensacola, Fla. | 1000 |
| WSPB | Sarasota, Fla. | 1000 |
| WSTU | Stuart, Fla. | 250 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WTNT | Tallahassee, Fla. | 1000 |
| WGPC | Albany, Ga. | 250 |
| WBHF | Cartersville, Ga. | 1000 |
| WCON | Cornelia, Ga. | 250 |
| WKEU | Griffin, Ga. | 1000 |
| WMVG | Milledgeville, Ga. | 1000 |
| WBYG | Savannah, Ga. | 1000 |
| WVLD | Valdosta, Ga. | 1000 |
| KEOK | Payette, Idaho | 250 |
| KEEP | Twin Falls, Idaho | 250 |
| WHFC | Cicero, Ill. | 1000 |
| WKEI | Kewanee, Ill. | 100 |
| WCVS | Springfield, Ill. | 1000 |
| WANE | Ft. Wayne, Ind. | 250 |
| WXVW | Jeffersonville, Ind. | 250 |
| WASK | Lafayette, Ind. | 250 |
| WAOV | Vincennes, Ind. | 250 |
| KPIG | Cedar Rapids, Iowa | 250 |
| KWBW | Hutchinson, Kans. | 250 |
| WTCO | Campbellsville, Ky. | 250 |
| WWXL | Manchester, Ky. | 1000 |
| WPAD | Paducah, Ky. | 1000 |
| KSIG | Crowley, La. | 1000 |
| KNOC | Natchitoches, La. | 1000 |
| WNPS | New Orleans, La. | 250 |
| WRKD | Rockland, Maine | 250 |
| WKTQ | South Paris, Maine | 250 |
| WTBO | Cumberland, Md. | 250 |
| WMAS | Springfield, Mass. | 1000 |
| WATZ | Alpena Township, Michigan | 1000 |
| WHTC | Holland, Mich. | 1000 |
| WMIQ | Iron Mtn., Mich. | 250 |
| WIBM | Jackson, Mich. | 1000 |
| WKLA | Ludington, Mich. | 250 |
| WHLS | Port Huron, Mich. | 250 |
| KATE | Albert Lea, Minn. | 250 |
| KBUN | Bemidji, Minn. | 1000 |
| KBMW | Breckenridge, Minn. | 250 |
| WELY | Ely, Minn. | 1000 |
| KFAM | St. Cloud, Minn. | 1000 |
| WROX | Clarksdale, Miss. | 250 |
| WCJU | Columbia, Miss. | 250 |
| WJXN | Jackson, Miss. | 250 |
| WOKK | Meridian, Miss. | 1000 |
| WNAT | Natchez, Miss. | 250 |
| WROB | West Point, Miss. | 250 |
| WMBH | Joplin, Mo. | 250 |
| KIRX | Kirksville, Mo. | 250 |
| KOKO | Warrensburg, Mo. | 250 |
| KWPM | West Plains, Mo. | 1000 |
| KXXL | Bozeman, Mont. | 1000 |
| KUDI | Great Falls, Mont. | 1000 |
| KXLL | Missoula, Mont. | 250 |
| KRBN | Red Lodge, Mont. | 1000 |
| KVCK | Wolf Point, Mont. | 1000 |
| KWBE | Beatrice, Nebr. | 250 |
| KCSR | Chadron, Nebr. | 250 |
| KONE | Reno, Nev. | 250 |
| WKXL | Concord, N.H. | 1000 |
| WEMJ | Laconia, N.H. | 250 |
| WFPG | Atlantic City, N.J. | 1000 |
| WCTC | New Brunswick, N.J. | 250 |
| KLOS | Albuquerque, N.Mex. | 250 |
| KLMX | Clayton, N.Mex. | 250 |
| KOBE | Las Cruces, N.Mex. | 250 |
| KENM | Portales, N.Mex. | 250 |
| WCLI | Corning, N.Y. | 1000 |
| WWSC | Glen Falls, N.Y. | 1000 |
| WHDL | Olean, N.Y. | 1000 |
| WKIP | Poughkeepsie, N.Y. | 250 |
| WKAL | Rome, N.Y. | 250 |
| WATA | Boone, N.C. | 250 |
| WGNC | Gastonia, N.C. | 1000 |
| WHVH | Henderson, N.C. | 1000 |
| WHKP | Hendersonville, N.C. | 1000 |
| WHIT | New Bern, N.C. | 250 |
| KGCA | Rugby, N.Dak. | 250 |
| WJER | Dover, Ohio | 250 |
| WMOH | Hamilton, Ohio | 250 |
| WLEC | Sandusky, Ohio | 1000 |
| KWHW | Altus, Okla. | 250 |
| KGFF | Shawnee, Okla. | 1000 |
| KSIW | Woodward, Okla. | 1000 |
| KORE | Eugene, Oreg. | 1000 |
| KFLW | Klamath Falls, Oreg. | 250 |
| KLBM | La Grande, Oreg. | 1000 |
| KBPS | Portland, Oreg. | 250 |
| WLEU | Erie, Pa. | 250 |
| WDAD | Indiana, Pa. | 250 |
| WPAM | Pottsville, Pa. | 250 |
| WMPT | So. Williamsport, Pa. | 250 |
| WMAJ | State College, Pa. | 250 |
| WJPA | Washington, Pa. | 250 |
| WWRI | W. Warwick, R.I. | 1000 |
| WQSN | Charleston, S.C. | 1000 |
| WCRS | Greenwood, S.C. | 1000 |
| WMYB | Myrtle Beach, S.C. | 1000 |
| WHSC | Hartsville, S.C. | 1000 |
| KBFS | Belle Fourche, S.Dak. | 250 |
| KYNT | Yankton, S.Dak. | 250 |
| WLAR | Athens, Tenn. | 250 |
| WMOC | Chattanooga, Tenn. | 250 |
| WDSG | Dyersburg, Tenn. | 250 |
| WSMG | Greeneville, Tenn. | 250 |
| WLAF | LaFollette, Tenn. | 100 |
| WGNS | Murfreesboro, Tenn. | 1000 |
| KRIC | Beaumont, Tex. | 250 |
| KBEN | Carrizo Sprgs., Tex. | 250 |
| KCTI | Gonzales, Tex. | 250 |
| KMBL | Junction, Tex. | 250 |
| KCYL | Lampasas, Tex. | 250 |
| KMHT | Marshall, Tex. | 1000 |
| KAMY | McCamey, Tex. | 250 |
| KNET | Palestine, Tex. | 250 |
| KSNY | Snyder, Tex. | 1000 |
| KURA | Moab, Utah | 250 |
| KEYY | Provo, Utah | 250 |

Kc. Wave Length W.P.

KDXU St. George, Utah 250
WSNO Barre, Vt. 1000
WTSA Brattleboro, Vt. 1000
WFTR Front Royal, Va. 250
WENZ Highland Springs, Va. 250
WREL Lexington, Va. 250
WMVA Martinsville, Va. 1000
KBKW Aberdeen, Wash. 1000
KCLX Colfax, Wash. 1000
KONP Port Angeles, Wash. 250
KAYE Puyallup, Wash. 1000
WPAR Parkersburg, W.Va. 250
KFIZ Fond du Lac, Wis. 250
WDLB Marshfield, Wis. 1000
WPFP Park Falls, Wis. 1000
WRCO Richland Center, Wis. 1000
KBBS Buffalo, Wyo. 250
KVOW Riverton, Wyo. 250

## 1460—205.4

CJOY Guelph, Ont. 10000
CKRB Ville St. Georges, Quebec 10000
CJNB N. Battleford, Sask. 10000
WFMH Cullman, Ala. 5000d
WPNX Phenix City, Ala. 5000
KZOT Marianna, Ark. 500
KCCL Paris, Ark. 500d
KTYM Inglewood, Calif. 5000d
KDON Salinas, Calif. 5000
KVRE Santa Rosa, Calif. 1000d
KYSN Colo. Sprgs., Colo. 1000
WBAR Bartow, Fla. 1000d
WZEP DeFuniak Springs, Florida 1000d
WMBR Jacksonville, Fla. 5000
WDMF Buford, Ga. 1000d
WROY Carmi, Ill. 1000d
WIXN Dixon, Ill. 1000d
WKAM Goshen, Ind. 1000d
WOCH North Vernon, Ind. 1000d
KSO Des Moines, Iowa 5000
KCRB Chanute, Kans. 1000d
WRVK Mt. Vernon, Ky. 500d
WAIL Baton Rouge, La. 5000
KBSF Springhill, La. 1000d
WEMD Easton, Md. 500d
WBET Brockton, Mass. 5000
WBRN Big Rapids, Mich. 1000d
WPON Pontiac, Mich. 1000
KDMA Montevideo, Minn. 1000
WELZ Belzoni, Miss. 1000d
KADY St. Charles, Mo. 5000d
KRNY Kearney, Nebr. 5000d
KENO Las Vegas, Nev. 1000
WOKO Albany, N.Y. 5000
WVOX New Rochelle, N.Y. 500d
WHEC Rochester, N.Y. 5000
WFVG Fuquay Sprgs., N.C. 1000d
WRKB Kannapolis, N.C. 500d
WMMH Marshall, N.C. 500d
WBNS Columbus, Ohio 5000
WPVL Painesville, Ohio 500d
KELR El Reno, Okla. 500
KROW Dallas, Oreg. 5000
WMBA Ambridge, Pa. 500d
WCMB Harrisburg, Pa. 5000
WBCU Union, S.C. 1000
WGOG Walhalla, S.C. 500d
WJAK Jackson, Tenn. 5000d
WEEN Lafayette, Tenn. 1000d
KBRZ Freeport, Tex. 500d
KLLL Lubbock, Tex. 1000d
WACO Waco, Tex. 1000
WPRW Manassas, Va. 500d
WRAD Radford, Va. 5000
WLPM Suffolk, Va. 1000
KCDI Kirkland, Wash. 5000d
KIMA Yakima, Wash. 5000
WBUC Buckhannon, W.Va. 1000d
WRAC Racine, Wis. 500d
WTMB Tomah, Wis. 1000d

## 1470—204.0

CHOW Welland, Ontario 1000
CFOX Pointe Claire, Que. 5000
WBLO Evergreen, Ala. 1000d
KZNG Hot Springs, Ark. 1000d
KBMX Coalinga, Calif. 500d
KUTY Palmdale, Calif. 5000
KXOA Sacramento, Calif. 5000
WMMW Meriden, Conn. 1000d
WPOM Pompano Beach, Fla. 5000
WRBB Tarpon Sprgs., Fla. 5000d
WAAG Adel, Ga. 1000d
WDOL Athens, Ga. 1000d
WCLA Claxton, Ga. 1000
WRGA Rome, Ga. 5000
WMPP Chicago Heights, Ill. 1000d
WMBD Peoria, Ill. 5000
WHUT Anderson, Ind. 1000d
KTRI Sioux City, Iowa 5000
KWVY Waverly, Iowa 1000d
KARE Atchison, Kans. 1000
KLIB Liberal, Kans. 500d
WSAC Fort Knox, Ky. 1000d
KPLC Lake Charles, La. 5000
WLAM Lewiston, Maine 5000
WJDY Salisbury, Md. 5000d
WTTR Westminster, Md. 1000d
WSRO Marlborough, Mass. 1000d
WNBP Newburyport, Mass. 500d
WKMF Flint, Mich. 5000
WKLZ Kalamazoo, Mich. 500d
KANO Anoka, Minn. 1000d
WCHJ Brookhaven, Miss. 1000d

Kc. Wave Length W.P.

WNAU New Albany, Miss. 500d
KGHM Brookfield, Mo. 500d
KTCB Malden, Mo. 1000d
WTKO Ithaca, N.Y. 1000d
WPDM Potsdam, N.Y. 1000d
WBIG Greensboro, N.C. 5000
WPNC Plymouth, N.C. 1000d
WTOE Spruce Pine, N.C. 1000d
WOHO Toledo, Ohio 1000
KVLH Pauls Valley, Okla. 250d
KVIN Vinita, Okla. 500d
KRAF Reedsport, Oreg. 5000d
WSAN Allentown, Pa. 5000
WFAR Farrell, Pa. 1000d
WWML Portage, Pa. 500d
WQXL Columbia, S.C. 5000d
WEAG Alcoa, Tenn. 1000d
WVOL Berry Hill, Tenn. 5000
KRBC Abilene, Tex. 5000
KWRD Henderson, Tex. 500d
KCNY San Marcos, Tex. 250d
KELA Centralia, Wash. 5000
KSEM Moses Lake, Wash. 5000
WWHY Huntington, W.Va. 5000d
WJBT Wheeling, W.Va. 500d
WBKV West Bend, Wis. 1000d
KTWO Casper, Wyo. 5000

## 1480—202.6

WARI Abbeville, Ala. 1000
WBTS Bridgeport, Ala. 1000d
WIXI Irondale, Ala. 5000d
WABB Mobile, Ala. 5000
KHAT Phoenix, Ariz. 500
KGLU Safford, Ariz. 1000
KTCN Berryville, Ark. 1000
KWUN Concord, Calif. 500d
KRED Eureka, Calif. 5000
KYOS Merced, Calif. 5000
KWIZ Santa Ana, Calif. 5000
KSEE Santa Maria, Calif. 1000
KTUX Pueblo, Colo. 1000d
WSOR Windsor, Conn. 500d
WAPG Arcadia, Fla. 1000d
WTHR Panama Beach, Fla. 500d
WXIV Windemere, Fla. 1000d
WYZE Atlanta, Ga. 5000d
WRDW Augusta, Ga. 5000
WGSB Geneva, Ill. 1000
WJBM Jerseyville, Ill. 500d
WTHI Terre Haute, Ind. 1000
WRSW Warsaw, Ind. 500
KLEE Ottumwa, Iowa 500d
KBEA Mission, Kans. 1000d
KLEO Wichita, Kans. 5000
WKOA Hopkinsville, Ky. 1000d
WNKY Neon, Ky. 1000d
WTLO Somerset, Ky. 1000d
KANV Jonesville, La. 500d
KJOE Shreveport, La. 1000d
WSAR Fall River, Mass. 5000
WMAX Grand Rapids, Michigan 1000d
WIOS Tawas City, Mich. 1000d
KAUS Austin, Minn. 1000
KGCX Sidney, Mont. 5000
KLMS Lincoln, Nebr. 1000
KWEW Hobbs, N. Mex. 5000
WLEA Hornell, N.Y. 1000d
WHOM New York, N.Y. 5000
WREM Remsen, N.Y. 5000d
WWOK Charlotte, N.C. 1000d
WYRN Louisburg, N.C. 500d
WMSJ Sylva, N.C. 5000d
WHBC Canton, Ohio 5000
WCIN Cincinnati, Ohio 5000
WTRA Latrobe, Pa. 500d
WDAS Philadelphia, Pa. 5000
WISL Shamokin, Pa. 1000
WSHP Shippensburg, Pa. 500d
KSDR Waterton, S.D. 1000d
WJFC Jefferson City, Tenn. 500
WLOK Memphis, Tenn. 5000d
KBOX Dallas, Tex. 5000
KLVL Pasadena, Tex. 1000
KAPE San Antonio, Tex. 500d
KONI Spanish Fork, Utah 1000d
WCFR Springfield, Vt. 1000d
WBBL Richmond, Va. 5000
WLEE Richmond, Va. 5000
WBLU Salem, Va. 5000d
KFHA Lakewood, Wash. 1000d
KVAN Vancouver, Wash. 1000d
WISM Madison, Wis. 5000
KRAE Cheyenne, Wyo. 1000d

## 1490—201.2

CFMR Fort Simpson NWT. 250
CFRC Kingston, Ont. 100
CKCR Kitchener, Ont. 1000
CKBM Montmagny, Que. 1000
WANA Anniston, Ala. 250
WAJF Decatur, Ala. 1000
WRLD Lanett, Ala. 250
WHBB Selma, Ala. 250
KYCA Prescott, Ariz. 1000
KAIR Tucson, Ariz. 250
KXAR Hope, Ark. 250
KTLO Mtn. Home, Ark. 250
KDRS Paragould, Ark. 250
KOTN Pine Bluff, Ark. 250
KXRJ Russellville, Ark. 250
KWAC Bakersfield, Calif. 250
KPAS Banning, Calif. 250
KBLA Burbank, Calif. 250
KICO Calexico, Calif. 250
KOWL Lake Tahoe, Calif. 250

Kc. Wave Length W.P.

KTOB Petaluma, Calif. 250
KBLF Red Bluff, Calif. 1000
KDB Santa Barbara, Calif. 250
KSYC Yreka, Calif. 1000
KBOL Boulder, Colo. 1000
KGUC Gunnison, Colo. 250
KCMS Manitou Sprgs., Colo. 100
KOLR Sterling, Colo. 250
WTOR Torrington, Conn. 250
WTRL Bradenton, Fla. 250
WJBS DeLand, Fla. 250
WMBM Miami Beach, Fla. 250
WSRA Milton, Fla. 250
WRGR Starke, Fla. 250
WTTB Vero Beach, Fla. 250
WSIR Winter Haven, Fla. 250
WMOG Brunswick, Ga. 250
WMJM Cordele, Ga. 1000
WMRE Monroe, Ga. 250
WSFB Quitman, Ga. 250
WSNT Sandersville, Ga. 250
WSYL Sylvania, Ga. 250
KTOH Lihue, Hawaii 250
KCID Caldwell, Idaho 1000
WKRO Cairo, Ill. 250
WDAN Danville, Ill. 1000
WBBR East St. Louis, Ill. 500
WOPA Oak Park, Ill. 1000
WZOE Princeton, Ind. 100
WKBV Richmond, Ind. 1000
WNDU South Bend, Ind. 250
KBUR Burlington, Iowa 1000
WDBQ Dubuque, Iowa 250
KRIB Mason City, Iowa 250
KKAN Phillipsburg, Kans. 250
KTOP Topeka, Kans. 250
WFKY Frankfort, Ky. 250
WKAY Glasgow, Ky. 1000
WOMI Owensboro, Ky. 1000
WSIP Paintsville, Ky. 1000
WIKC Bogalusa, La. 1000
KEUN Eunice, La. 250
KCIL Houma, La. 1000
KRUS Ruston, La. 250
WPOR Portland, Maine 1000
WTVL Waterville, Maine 1000
WARK Hagerstown, Md. 1000
WHAV Haverhill, Mass. 250
WMRC Milford, Mass. 250
WTXL W. Springfield, Mass. 1000
WABJ Adrian, Mich. 1000
WBFC Fremont, Mich. 250
WMDN Midland, Mich. 1000
WCBQ Whitehall, Mich. 1000
KXRA Alexandria, Minn. 250
KOZY Grand Rapids, Minn. 250
KLGR Redwd. Falls, Minn. 1000
WLOX Biloxi, Miss. 1000
WCLD Cleveland, Miss. 250
WHOC Philadelphia, Miss. 250
WTUP Tupelo, Miss. 250
WVIM Vicksburg, Miss. 250
KDMO Carthage, Mo. 250
KTTR Rolla, Mo. 1000
KDRO Sedalia, Mo. 250
KBOW Butte, Mont. 1000
KBON Omaha, Nebr. 1000
WEMJ Laconia, N.H. 1000
WLDB Atlantic City, N.J. 250
KRSN Los Alamos, N.Mex. 250
KRTN Raton, N.Mex. 250
WCSS Amsterdam, N.Y. 250
WBTA Batavia, N.Y. 250
WKNY Kingston, N.Y. 1000
WICY Malone, N.Y. 1000
WDLC Port Jervis, N.Y. 250
WOLF Syracuse, N.Y. 250
WSSB Durham, N.C. 250
WFLB Fayetteville, N.C. 250
WLOE Leaksville, N.C. 250
WRNB New Bern, N.C. 1000
WRMT Rocky Mount, N.C. 250
WSTP Salisbury, N.C. 250
WSVM Valdese, N.C. 250
KNDC Hettinger, N.Dak. 250
KOVC Valley City, N.Dak. 250
WBEX Chillicothe, Ohio 1000
WJMO Cleveland Hghts., Ohio 250
WOHI E. Liverpool, Ohio 250
WMOA Marietta, Ohio 1000
WMRN Marion, Ohio 1000
KWRW Guthrie, Okla. 100
KBIX Muskogee, Okla. 250
KBKR Baker, Oreg. 250
KRNR Roseburg, Oreg. 250
KBZY Salem, Oreg. 1000
WESB Bradford, Pa. 250
WAZL Hazleton, Pa. 1000
WARD Johnstown, Pa. 250
WGAL Lancaster, Pa. 1000
WBCB Levittown, Pa. 1000
WMRF Lewiston, Pa. 1000
WMGW Meadville, Pa. 250
WNBT Wellsboro, Pa. 250
WMDD Fajardo, P.R. 250
WSIB Beaufort, S.C. 100
WGCD Chester, S.C. 250
WMRB Greenville, S.C. 1000
KORN Mitchell, S.Dak. 250
WOPI Bristol, Tenn. 1000
WDXB Chattanooga, Tenn. 1000
WROL Fountain City, Tenn. 250
WJJM Lewisburg, Tenn. 1000
WDXL Lexington, Tenn. 1000
KNOW Austin, Tex. 250
KIBL Beeville, Tex. 250
KBST Big Spring, Tex. 250
KHUZ Borger, Tex. 250

Kc. Wave Length W.P.

KNEL Brady, Tex. 250
KSAM Huntsville, Tex. 250
KVOZ Laredo, Tex. 250
KZZN Littlefield, Tex. 250
KPLT Paris, Tex. 250
KGKB Tyler, Tex. 250
KVWC Vernon, Tex. 250
KVOG Ogden, Utah 1000
WKVT Brattleboro, Vt. 250
WIKE Newport, Vt. 1000
WCVA Culpeper, Va. 250
WVEC Hampton, Va. 250
WAYB Waynesboro, Va. 250
KBRO Bremerton, Wash. 1000
KLOG Kelso, Wash. 250
KENE Toppenish, Wash. 250
KTEL Walla Walla, Wash. 250
WTGR Charleston, W.Va. 250
WTCS Fairmont, W.Va. 250
WLOH Princeton, W.Va. 250
WGEZ Beloit, Wis. 250
WLCX LaCrosse, Wis. 1000
WIGM Medford, Wis. 1000
WOSH Oshkosh, Wis. 250
KIML Gillette, Wyo. 250
KLME Laramie, Wyo. 100
KRTR Thermopolis, Wyo. 250
KGOS Torrington, Wyo. 1000

## 1500—199.9

CHUC Port Hope, Ont. 1000
KXRX San Jose, Calif. 5000
WTOP Washington, D.C. 50000
WKIZ Key West, Fla. 250
WJBK Detroit, Mich. 10000
KSTP St. Paul, Minn. 50000
KPIR Eugene, Ore. 10000d
WMNT Manati, P.R. 250
KTXO Sherman, Tex. 250
KANI Wharton, Tex. 500

## 1510—199.1

CKOT Tillsonburg, Ont. 1000d
KASK Ontario, Calif. 1000
KIRV Fresno, Calif. 500
KTIM San Rafael, Calif. 1000d
KMOR Littleton, Colo. 1000
WNLC New London, Conn. 5000
WKAI Macomb, Ill. 250d
WMEX Boston, Mass. 5000
WLKM Three Rivers, Mich. 500
KANS Independence, Mo. 1000d
WRAN Dover, N.J. 1000
WLAC Nashville, Tenn. 50000
KCTX Childress, Tex. 250d
KSTV Stephenville, Tex. 250d
KGA Spokane, Wash. 50000
WAUX Waukesha, Wis. 10000d

## 1520—197.4

KGHT Hollister, Calif. 500
KACY Port Hueneme, Calif. 10000
WHOW Clinton, Ill. 5000d
WSVL Shelbyville, Ind. 250
KSIB Creston, Iowa 1000d
WRSL Stanford, Ky. 500d
KXKW Lafayette, La. 500
WKBW Buffalo, N.Y. 50000
WFYI Mineola, N.Y. 10000d
KOMA Okla. City, Okla. 50000
KGON Oregon City, Oreg. 10000
WWWW Rio Piedras, P.R. 250

## 1530—196.1

KFBK Sacramento, Calif. 50000
KMAM Butler, Mo. 250
WENG Englewood, Fla. 1000
WCKY Cincinnati, Ohio 50000
KGBT Harlingen, Tex. 50000
WQVA Quantico, Va. 250

## 1540—195.0

ZNS Nassau, B.W.I. 10000
KPOL Los Angeles, Calif. 50000
WSMI Litchfield, Ill. 1000d
WBNL Boonville, Ind. 250d
WLOI LaPorte, Ind. 250d
KXEL Waterloo, Iowa 50000
KNEX McPherson, Kans. 250d
KLKC Parsons, Kans. 250d
WDON Wheaton, Md. 1000
WPTR Albany, N.Y. 50000
WIFM Elkin, N.C. 250d
WABQ Cleveland, Ohio 1000d
WJMJ Philadelphia, Pa. 50000d
WPTS Pittston, Pa. 1000d
WPME Punxsutawney, Pa. 1000d
WADK Newport, R.I. 1000d
KCUL Ft. Worth, Tex. 50000d
KGBC Galveston, Tex. 1000
KBVU Bellevue, Wash. 1000
WTKM Hartford, Wis. 500d

## 1550—193.5

CBE Windsor, Ont. 10000
WBHM Birmingham, Ala. 50000d
WAAY Huntsville, Ala. 5000
WMOE Mobile, Ala. 50000d
KFIF Tucson, Ariz. 50000d
KKHI San Fran., Calif. 10000
KDAB Arvada, Colo. 10000d
WRIZ Coral Gables, Fla. 10000d
WORT New Smyrna Bch., Fla. 250

| Kc. | Wave Length | W.P. |
|---|---|---|
| WZST | Tampa, Fla. | 10000d |
| WSMA | Smyrna, Ga. | 10000d |
| WJIL | Jacksonville, Ill. | 1000d |
| WCTW | New Castle, Ind. | 250 |
| KEDD | Dodge City, Kans. | 1000d |
| WIRV | Irvine, Ky. | 1000d |
| WMSK | Morganfield, Ky. | 250d |
| WYNE | Baton Rouge, La. | 5000d |
| KREB | Shreveport, La. | 10000 |
| WSHN | Fremont, Mich. | 1000d |
| KBLR | Bolivar, Mo. | 250 |
| KGMO | Cape Girardeau, Mo. | 5000d |
| KKJO | St. Joseph, Mo. | 5000 |
| WCGR | Canadaiqua, N.Y. | 250 |
| WBAZ | Kingston, N.Y. | 500d |
| WBVM | Utica, N.Y. | 1000 |
| WTYN | Tryon, N.C. | 1000d |
| WPEG | Winston-Salem, N.C. | 1000d |
| KUTT | Fargo, N.D. | 5000d |
| WDLR | Delaware, Ohio | 500d |
| KMAD | Madill, Okla. | 250 |
| WLOA | Braddock, Pa. | 1000d |
| WTTC | Towanda, Pa. | 500d |
| WKFE | Yauco, P.R. | 250 |
| WBSC | Bennetsville, S.C. | 10000 |
| WTHB | N. Augusta, S.C. | 1000d |
| KVPH | Canyon, Tex. | 1000 |
| KWBC | Navasota, Tex. | 250d |
| WTPI | Cookville, Tenn. | 250d |
| WKPT | Kingsport, Tenn. | 10000d |
| WKBA | Vinton, Va. | 1000d |
| WBOF | Virginia Beach, Va. | 5000d |
| WXVA | Charlestown, W.Va. | 500d |
| KOQT | Bellingham, Wash. | 1000d |

### 1560—192.3

| | | |
|---|---|---|
| CFRS | Simcoe, Ont. | 250d |
| KPMC | Bakersfield, Calif. | 10000 |
| KIQS | Willows, Calif. | 250d |
| WBYS | Canton, Ill. | 250d |
| KSWI | Council Bluffs, Iowa | 1000d |
| WDXR | Paducah, Ky. | 1000 |
| KQYX | Joplin, Mo. | 250 |
| WQXR | New York, N.Y. | 50000 |
| WTNS | Coshocton, Ohio | 1000d |
| WTOD | Toledo, Ohio | 5000d |
| KWCO | Chickasha, Okla. | 1000 |
| WRSJ | Bayamon, P.R. | 5000 |
| KCAD | Abilene, Tex. | 500d |
| KHBR | Hillsboro, Tex. | 250d |
| KGUL | Port Lavaca, Tex. | 500d |
| KHOK | Hoquiam, Wash. | 1000d |

### 1570—191.1

| | | |
|---|---|---|
| CHUB | Nanaimo, B.C. | 10000 |
| CFRY | Portage la Prairie, Manitoba | 250d |
| CFOR | Orillia, Ont. | 10000 |
| WCRL | Oneonta, Ala. | 250d |
| WRWJ | Selma, Ala. | 1000d |
| KBRI | Brinkley, Ark. | 250d |
| KBJT | Fordyce, Ark. | 250d |
| KRKC | King City, Calif. | 250d |
| KCVR | Lodi, Calif. | 1000d |
| KACE | Riverside, Calif. | 1000d |
| KLOV | Loveland, Colo. | 250d |
| WTWB | Auburndale, Fla. | 5000d |
| WPAP | Fernandina Beach, Florida | 1000d |
| WOKC | Okeechobee, Fla. | 1000 |
| WJOE | Ward Ridge, Fla. | 250 |
| WMES | Ashburn, Ga. | 1000d |
| WGHC | Clayton, Ga. | 1000d |
| WEAD | College Park, Ga. | 1000d |
| WGSR | Millen, Ga. | 250d |
| WOKZ | Alton, Ill. | 1000d |
| WFRL | Freeport, Ill. | 5000d |
| WBEE | Harvey, Ill. | 1000d |
| WTAY | Robinson, Ill. | 250d |
| WILO | Frankfort, Ind. | 250d |
| WAWK | Kendallville, Ind. | 250d |
| WOWI | New Albany, Ind. | 1000d |
| KMCD | Fairfield, Iowa | 250d |
| KJFJ | Webster City, Iowa | 250d |
| KNDY | Marysville, Kans. | 250d |
| KWSK | Pratt, Kans. | 250d |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WKKS | Vanceburg, Ky. | 250d |
| WABL | Amite, La. | 500d |
| KLLA | Leesville, La. | 1000 |
| KMAR | Winnsboro, La. | 1000 |
| WAQE | Towson, Md. | 5000d |
| WPEP | Taunton, Mass. | 1000d |
| WMLO | Beverly, Mass. | 500d |
| WDEW | Westfield, Mass. | 1000d |
| WMRP | Flint, Mich. | 1000d |
| WFUR | Grand Rapids, Michigan | 1000d |
| KUXL | Golden Valley, Minn. | 500d |
| WONA | Winona, Miss. | 1000d |
| KLEX | Lexington, Mo. | 250d |
| WAFS | Amsterdam, N.Y. | 1000 |
| WFLR | Dundee, N.Y. | 1000d |
| WBUZ | Fredonia, N.Y. | 250d |
| WAPC | Riverhead, N.Y. | 1000d |
| WTLK | Taylorsville, N.C. | 500 |
| WNCA | Siler City, N.C. | 1000d |
| WCLW | Mansfield, Ohio | 1000 |
| WPTW | Piqua, Ohio | 250d |
| KTAT | Frederick, Okla. | 250d |
| KOLS | Pryor, Okla. | 1000d |
| KGGG | Forest Grove, Oreg. | 1000d |
| KOHU | Hermiston, Oreg. | 1000d |
| WBUX | Doylestown, Pa. | 1000d |
| WSHH | Latrobe, Pa. | 1000d |
| WFGN | Gaffney, S.C. | 250d |
| WJES | Johnston, S.C. | 250 |
| WLSC | Loris, S.C. | 1000d |
| WHLP | Centerville, Tenn. | 1000d |
| WCLE | Cleveland, Tenn. | 1000d |
| WTRB | Ripley, Tenn. | 1000d |
| KZOL | Farwell, Tex. | 250d |
| KVLG | La Grange, Tex. | 250d |
| KTER | Terrell, Tex. | 250d |
| KWIC | Salt Lake City, Utah | 5000 |
| WSWV | Pennington Gap, Va. | 1000d |
| WYTI | Rocky Mount, Va. | 1000d |
| WEER | Warrenton, W.Va. | 500d |
| WAPL | Appleton, Wis. | 1000d |

### 1580—189.2

| | | |
|---|---|---|
| CBJ | Chicoutimi, Que. | 10000 |
| WJHB | Talladega, Ala. | 1000d |
| KYND | Tempe, Ariz. | 10000d |
| KPCA | Marked Tree, Ark. | 250d |
| KFDF | Van Buren, Ark. | 1000d |
| KPON | Anderson, Calif. | 1000d |
| KWIP | Merced, Calif. | 500d |
| KDAY | Santa Monica, Cal. | 50000d |
| KHUM | Santa Rosa, Calif. | 500d |
| KPIK | Colorado Sprgs., Colo. | 5000d |
| WWIL | Ft. Lauderdale, Fla. | 10000 |
| WGRC | Green Cove Springs, Florida | 500d |
| WMDF | Mount Dora, Fla. | 1000d |
| WCLS | Columbus, Ga. | 1000d |
| WPFE | Eastman, Ga. | 500d |
| WLBA | Gainesville, Ga. | 5000d |
| WKIG | Glenville, Ga. | 1000d |
| WKKD | Aurora, Ill. | 250d |
| WDQN | DuQuoin, Ill. | 250d |
| WBBA | Pittsfield, Ill. | 250d |
| WKID | Urbana, Ill. | 250d |
| WCNB | Connersville, Ind. | 250d |
| WJVA | South Bend, Ind. | 1000d |
| WAMW | Washington, Ind. | 250d |
| KCHA | Charles City, Iowa | 500d |
| KWNT | Davenport, Iowa | 500d |
| KDSN | Denison, Iowa | 500d |
| WAXU | Georgetown, Ky. | 10000d |
| WMTL | Leitchfield, Ky. | 250d |
| WPKY | Princeton, Ky. | 250d |
| KLUV | Haynesville, La. | 250d |
| KLOU | Lake Charles, La. | 1000 |
| WPGC | Bradbury Hgts., Md. | 10000 |
| WOWE | Allegan, Mich. | 250d |
| WJUD | St. Johns, Mich. | 1000d |
| KDOM | Windom, Minn. | 250d |
| WAMY | Amory, Miss. | 5000d |
| WGLC | Centreville, Miss. | 250d |
| WESY | Leland, Miss. | 1000 |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WPMP | Pascagoula-Moss Point, Mississippi | 1000d |
| KCGM | Columbia, Mo. | 250d |
| KESM | Eldorado Springs, Mo. | 250d |
| KNIM | Maryville, Mo. | 250d |
| WNJH | Hammonton, N.J. | 250d |
| WCRV | Washington, N.J. | 500d |
| KRAZ | Albuquerque, N.Mex. | 1000d |
| WPAC | Patchogue, N.Y. | 10000d |
| WZKY | Albemarle, N.C. | 250d |
| WPYB | Benson, N.C. | 500d |
| WVKO | Columbus, Ohio | 1000d |
| KLTR | Blackwell, Okla. | 250d |
| WCOY | Columbia, Pa. | 500d |
| WEND | Ebensburg, Pa. | 1000d |
| WANB | Waynesburg, Pa. | 250d |
| WORG | Orangeburg, S.C. | 1000d |
| WYCL | York, S.C. | 250d |
| WSKT | Colonial Village, Tenn. | 250d |
| WLIJ | Shelbyville, Tenn. | 1000d |
| WSKT | South Knoxville, Tenn. | 250 |
| KGAF | Gainesville, Tex. | 250d |
| KIRT | Mission, Tex. | 1000d |
| KTLU | Rusk, Tex. | 500d |
| KWED | Seguin, Tex. | 1000d |
| KBYP | Shamrock, Tex. | 250d |
| WBGO | Waco, Tex. | 1000 |
| WILA | Danville, Va. | 1000d |
| WPUV | Pulaski, Va. | 5000d |
| WTTN | Watertown, Wis. | 1000d |

### 1590—188.7

| | | |
|---|---|---|
| WATM | Atmore, Ala. | 5000d |
| WVNA | Tuscumbia, Ala. | 5000d |
| KPBA | Pine Bluff, Ark. | 1000d |
| KLIV | San Jose, Calif. | 5000 |
| KUDU | Ventura, Calif. | 1000 |
| KCIN | Victorville, Calif. | 500d |
| WBRY | Waterbury, Conn. | 5000 |
| WOWY | Clewiston, Fla. | 500d |
| WILZ | St. Petersburg Beach, Florida | 1000d |
| WELE | S. Daytona Bch., Fla. | 1000d |
| WALG | Albany, Ga. | 1000 |
| WLFA | Lafayette, Ga. | 5000d |
| WTGA | Thomaston, Ga. | 500d |
| WNMP | Evanston, Ill. | 1000d |
| WAIK | Galesburg, Ill. | 5000d |
| WGEE | Indianapolis, Ind. | 5000d |
| WPCO | Mt. Vernon, Ind. | 500d |
| KWBG | Boone, Iowa | 1000 |
| KVGB | Great Bend, Kans. | 5000 |
| WLBN | Lebanon, Ky. | 1000d |
| KEVL | White Castle, La. | 1000d |
| WETT | Ocean City, Md. | 1000 |
| WTVB | Coldwater, Mich. | 5000 |
| WDOG | Marine City, Mich. | 1000d |
| WMIC | St. Helen, Mich. | 500d |
| KRAD | E. Grand Forks, Minn. | 1000d |
| WOKJ | Jackson, Miss. | 5000d |
| KDEX | Dexter, Mo. | 1000d |
| KPRS | Kansas City, Mo. | 1000d |
| KCLU | Rolla, Mo. | 1000d |
| WSMN | Nashua, N.H. | 5000 |
| WERA | Plainfield, N.J. | 500d |
| WAUB | Auburn, N.Y. | 500d |
| WEHH | Elmira Heights-Horseheads, N.Y. | 500d |
| WGGO | Salamanca, N.Y. | 5000d |
| WVOE | Chadburn, N.C. | 1000 |
| WGTC | Greenville, N.C. | 5000d |
| WNOS | High Point, N.C. | 1000d |
| WAKR | Akron, Ohio | 5000 |
| WSRW | Hillsboro, Ohio | 500d |
| KHEN | Henryetta, Okla. | 500d |
| KTIL | Tillamook, Oreg. | 1000 |
| WZUM | Carnegie, Pa. | 1000d |
| WCBG | Chambersburg, Pa. | 5000d |
| WEEZ | Chester, Pa. | 1000 |
| WXRF | Guayama, P.R. | 1000 |
| WYNG | Warwick, R.I. | 1000d |
| WABV | Abbeville, S.C. | 1000d |
| WACA | Camden, S.C. | 1000d |
| KCCR | Pierre, S.Dak. | 1000d |

| Kc. | Wave Length | W.P. |
|---|---|---|
| WJSO | Jonesboro, Tenn. | 5000d |
| WDBL | Springfield, Tenn. | 1000d |
| KGAS | Carthage, Tex. | 1000d |
| KERC | Eastland, Tex. | 500d |
| KINT | El Paso, Tex. | 1000d |
| KYOK | Houston, Tex. | 5000 |
| KCBD | Lubbock, Tex. | 1000 |
| KBUS | Mexia, Tex. | 500d |
| KTOD | Sinton, Tex. | 1000 |
| WRLA | Luray, Va. | 500d |
| WRGM | Richmond, Va. | 5000d |
| KETO | Seattle, Wash. | 5000d |
| WIXK | New Richmond, Wis. | 5000d |
| WSWW | Platteville, Wis. | 5000 |
| WTRW | Two Rivers, Wis. | 1000d |
| WAWA | West Allis, Wis. | 1000d |
| KCHY | Cheyenne, Wyo. | 1000d |

### 1600—187.5

| | | |
|---|---|---|
| CHVC | Niagara Falls, Ont. | 10000 |
| WEUP | Huntsville, Ala. | 5000d |
| WAPX | Montgomery, Ala. | 1000 |
| KXEW | Tucson, Ariz. | 1000 |
| KGST | Fresno, Calif. | 1000d |
| KWOW | Pomona, Calif. | 1000 |
| KHER | Santa Maria, Calif. | 500d |
| KUBA | Yuba City, Calif. | 5000 |
| KLAK | Lakewood, Colo. | 5000 |
| WKEN | Dover, Del. | 500d |
| WKTX | Atlantic Beach, Fla. | 1000d |
| WKWF | Key West, Fla. | 500 |
| WHEW | Riviera Beach, Fla. | 1000 |
| WOKB | Winter Garden, Fla. | 1000d |
| WGKA | Atlanta, Ga. | 1000d |
| WNGA | Nashville, Ga. | 1000d |
| WCGO | Chicago Hgts., Ill. | 1000d |
| WMCW | Harvard, Ill. | 500d |
| WBTO | Linton, Ind. | 500d |
| WARU | Peru, Ind. | 1000d |
| KLGA | Algona, Iowa | 5000d |
| KCRG | Cedar Rapids, Iowa | 5000 |
| KMDO | Ft. Scott, Kans. | 500d |
| WSTL | Eminence, Ky. | 500d |
| KFNV | Ferriday, La. | 1000d |
| KLVI | Vivian, La. | 500d |
| WINX | Rockville, Md. | 1000 |
| WBOS | Brookline, Mass. | 5000 |
| WTYM | East Longmeadow, Mass. | 5000d |
| WHRV | Ann Arbor, Mich. | 1000 |
| WTRU | Muskegon, Mich. | 5000 |
| WKDL | Clarksdale, Miss. | 1000d |
| WFFF | Columbia, Miss. | 500d |
| KATZ | St. Louis, Mo. | 5000 |
| KTTN | Trenton, Mo. | 500d |
| KNCY | Nebraska City, Nebr. | 500d |
| KRFS | Superior, Nebr. | 500d |
| WMCR | Oneida, N.Y. | 1000d |
| WLNG | Sag Harbor, N.Y. | 500 |
| WXKW | Troy, N.Y. | 500d |
| WWRL | Woodside, N.Y. | 50000 |
| WGIV | Charlotte, N.C. | 1000 |
| WIDU | Fayetteville, N.C. | 1000d |
| WFRC | Reidsville, N.C. | 1000 |
| WKSK | W. Jefferson, N.C. | 1000d |
| KDAK | Carrington, N.Dak. | 500d |
| WBLY | Springfield, Ohio | 1000d |
| WTTF | Tiffin, Ohio | 500d |
| KUSH | Cushing, Okla. | 1000d |
| KASH | Eugene, Oreg. | 1000 |
| KSTH | St. Helens, Oreg. | 1000d |
| WHOL | Allentown, Pa. | 500d |
| WEZN | Elizabethtown, Pa. | 500d |
| WFIS | Fountain Inn, S.C. | 1000d |
| WHBT | Harriman, Tenn. | 5000d |
| WKBJ | Milan, Tenn. | 1000d |
| KBBB | Borger, Tex. | 500d |
| KBOR | Brownsville, Tex. | 1000 |
| KWEL | Midland, Tex. | 1000 |
| KCFH | Cuero, Tex. | 500d |
| KMAE | McKinney, Tex. | 1000d |
| KOGT | Orange, Tex. | 1000 |
| KBBC | Centerville, Utah | 1000d |
| WHLL | Wheeling, W.Va. | 5000d |
| WCWC | Ripon, Wis. | 5000d |

# U. S. and Canadian AM Stations by Location

Abbreviations: C.L., call letters; Kc., frequency in kilocycles; N.A., network affiliation—A: American Broadcasting Co.; C: Columbia Broadcasting System, Inc.; M: Mutual Broadcasting System; N: National Broadcasting Co., Inc.

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Abbeville, Ala. | WARI | 1480 | |
| Abbeville, La. | KROF | 960 | |
| Abbeville, S.C. | WABV | 1590 | |
| Aberdeen, Md. | WAMO | 970 | |
| Aberdeen, Miss. | WMPA | 1240 | |
| Aberdeen, S.Dak. | KABR | 1420 | |
| | KSDN | 930 | A |
| Aberdeen, Wash. | KBKW | 1450 | |
| | KXRO | 1320 | |
| Abilene, Tex. | KRBC | 1470 | A |
| | KCAD | 1560 | |
| | KNIT | 1280 | |
| | KWKC | 1340 | M |
| Abingdon, Va. | WBBI | 1230 | |
| Ada, Okla. | KADA | 1230 | A |
| Adel, Ga. | WAAG | 1470 | |
| Adrian, Mich. | WABJ | 1490 | A |
| Aguadilla, P.R. | WABA | 850 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | WGRF | 1340 | |
| Ahoskie, N.C. | WRCS | 970 | |
| Aiken, S.C. | WAKN | 990 | |
| Aitkin, Minn. | KKIN | 1000 | D |
| Akron, Ohio | WAKR | 1590 | A |
| | WADC | 1350 | C |
| | WCUE | 1150 | M |
| | WHLO | 640 | M |
| Alamogordo, N.M. | KALG | 1230 | M |
| | KRAC | 1270 | |
| Alamosa, Colo. | KGIW | 1450 | M |
| Albany, Ga. | WALG | 1590 | A |
| | WGPC | 1450 | C |
| | WJAZ | 960 | |
| Albany, Ky. | WANY | 1390 | |
| Albany, Minn. | KASM | 1150 | |
| Albany, N.Y. | WABY | 1400 | |
| | WOKO | 1460 | M |
| | WPTR | 1540 | A |
| | WROW | 590 | C |
| Albany, Oreg. | KWIL | 790 | M |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | KABY | 990 | |
| Albemarle, N.C. | WABZ | 1010 | |
| | WZKY | 1580 | |
| Albert Lea, Minn. | KATE | 1450 | A |
| Albertville, Ala. | WAVU | 630 | |
| Albion, Mich. | WALM | 1260 | |
| Albuquerque, N.M. | KABQ | 1350 | |
| | KDEF | 1150 | A |
| | KGGM | 610 | C |
| | KOB | 770 | N |
| | KQEO | 920 | M |
| | KARA | 1310 | |
| | KVOD | 730 | |
| | KLOS | 1450 | |
| | KRAZ | 1580 | A |
| Alcoa, Tenn. | WEAG | 1470 | |
| Alexander City, Ala. | WRFS | 1050 | |
| Alexandria, La. | KALB | 580 | A |
| | KDBS | 1410 | |
| | KSYL | 970 | N |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Alexandria, Minn. | KXRA | 1490 | A |
| Alexandria, Va. | WPIK | 730 | M |
| Algona, Iowa | KLGA | 1600 | |
| Alice, Tex. | KOPY | 1070 | |
| Allegan, Mich. | WOWE | 1580 | |
| Allentown, Pa. | WHOL | 1600 | |
| | WAEB | 790 | |
| | WKAP | 1320 | |
| | WSAN | 1470 | N |
| Alliance, Nebr. | KCOW | 1400 | |
| Alliance, Ohio | WFAH | 1310 | |
| Alma, Ga. | WCQS | 1400 | |
| Alma, Mich. | WFYC | 1280 | |
| Alpena Township, Mich. | WATZ | 1450 | |
| Alpine, Tex. | KVLF | 1240 | M |
| Altavista, Va. | WKDE | 1280 | |
| Alton, Ill. | WOKZ | 1570 | |
| Altona, Man. | CFAM | 1290 | |
| Altoona, Pa. | WFBG | 1290 | N |
| | WRTA | 1240 | A |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | WVAM | 1430 | C |
| Alturas, Calif. | KCNO | 570 | |
| Altus, Okla. | KWHW | 1450 | |
| Alva, Okla. | KALV | 1430 | |
| Amarillo, Tex. | KBUY | 1010 | M |
| | KFDA | 1440 | A |
| | KGNC | 710 | N |
| | KIXZ | 940 | C |
| | KRAY | 1360 | |
| | KZIP | 1310 | |
| Ambridge, Pa. | WMBA | 1460 | |
| Americus, Ga. | WDEC | 1290 | |
| Ames, Iowa | KSAI | 1430 | |
| | WOI | 640 | |
| Amherst, N.S. | CKDH | 1400 | |
| Amherst, N.Y. | WUFO | 1080 | |
| Amite, La. | WABL | 1570 | |
| Amory, Miss. | WAMY | 1580 | |
| Amos, Que. | CHAD | 1340 | |
| Amsterdam, N.Y. | WAFS | 1570 | |
| | WCSS | 1490 | |
| Anaconda, Mont. | KANA | 1230 | |
| Anacortes, Wash. | KAGT | 1340 | |
| Anaheim, Calif. | KEZY | 1190 | |
| Anchorage, Alaska | KBYR | 1270 | |
| | KFQD | 730 | C-A |
| | KENI | 550 | A-M-N |
| Andalusia, Ala. | WCTA | 920 | |
| Anderson, Calif. | KPON | 1580 | |
| Anderson, Ind. | WHUT | 1470 | M |
| | WHBU | 1240 | C |
| Anderson, S.C. | WAIM | 1230 | C |
| | WANS | 1280 | M |
| Andrews, Tex. | KACT | 1360 | |
| Annapolis, Md. | WANN | 1190 | |
| | WABW | 810 | |
| | WNAV | 1430 | |
| Ann Arbor, Mich. | WHRV | 1600 | M |
| | WPAG | 1050 | |
| Anna, Ill. | WRAJ | 1440 | |
| Anniston, Ala. | WANA | 1490 | |
| | WDNG | 1450 | A |
| | WHMA | 1390 | |
| Anoka, Minn. | KANO | 1470 | |
| Ansonia, Conn. | WADS | 690 | M |
| Antigo, Wis. | WATK | 900 | |
| Antigonish, N.S. | CJFX | 580 | |
| Apollo, Pa. | WAVL | 910 | |
| Apple Valley, Cal. | KAVR | 960 | |
| Appleton, Wis. | WAPL | 1570 | |
| | WHBY | 1230 | M |
| Arab, Ala. | WRAB | 1380 | |
| Arcadia, Fla. | WAPG | 1480 | |
| Arcata, Calif. | KENL | 1340 | |
| Ardmore, Okla. | KVSO | 1240 | A |
| Arecibo, P.R. | WCMN | 1280 | |
| | WMIA | 1070 | |
| | WNIK | 1230 | |
| Arkadelphia, Ark. | KVRC | 1240 | M |
| Arkan. City, Kans. | KSOK | 1280 | |
| Arlington, Fla. | WQTY | 1220 | |
| Arlington, Va. | WAVA | 780 | |
| | WEAM | 1390 | |
| Artesia, N.M. | KSVP | 990 | M |
| Arvada, Colo. | KDAB | 1550 | |
| Ashburn, Ga. | WMES | 1570 | |
| Asbury Park, N.J. | WJLK | 1310 | |
| Asheboro, N.C. | WGWR | 1260 | |
| Asheville, N.C. | WISE | 1310 | |
| | WLOS | 1380 | N-M-A |
| | WSKY | 1230 | |
| | WWNC | 570 | C |
| Ashland, Ky. | WCMI | 1340 | C |
| | WTCR | 1420 | |
| Ashland, Ohio | WNCO | 1340 | |
| Ashland, Oreg. | KWIN | 1400 | M |
| | KRVC | 1350 | |
| Ashland, Va. | WIVE | 1430 | |
| Ashland, Wis. | WATW | 1400 | |
| Ashtabula, Ohio | WREO | 970 | |
| Astoria, Oreg. | KAST | 1370 | M |
| | KIAL | 1230 | |
| Atchison, Kans. | KARE | 1470 | |
| Athens, Ga. | WGAU | 1340 | C |
| | WDOL | 1470 | |
| | WRFC | 960 | |
| Athens, Ohio | WATH | 970 | |
| | WOUB | 1340 | |
| Athens, Tenn. | WLAR | 1450 | M |
| Athens, Tex. | KBUD | 1410 | |
| Atlanta, Ga. | WPLO | 590 | C |
| | WAKE | 1340 | |
| | WAOK | 1380 | |
| | WERD | 860 | |
| | WGKA | 1600 | |
| | WGST | 920 | A |
| | WIIN | 970 | |
| | WQXI | 790 | |
| | WSB | 750 | N |
| | WYZE | 1480 | C |
| Atlanta, Tex. | KALT | 900 | |
| Atlantic, Iowa | KJAN | 1220 | |
| Atlantic Beach, Fla. | WKTX | 1600 | |
| Atlantic City, N.J. | WFPG | 1450 | C |
| | WLDB | 1490 | A-M |
| | WMID | 1340 | A |
| Atmore, Ala. | WATM | 1590 | |
| Attleboro, Mass. | WARA | 1320 | |
| Auburn, Ala. | WAUD | 1230 | A |
| Auburn, Calif. | KAHI | 950 | |
| Auburn, N.Y. | WMBO | 1340 | M |
| | WAUB | 1590 | |
| Auburn, Wash. | KASY | 1220 | |
| Auburndale, Fla. | WTWB | 1570 | |
| Auburndale, Wis. | WLBL | 930 | |
| Augusta, Ga. | WAUG | 1050 | |
| | WBBQ | 1340 | M |
| | WBIA | 1230 | N |
| | WGAC | 580 | A |
| | WRDW | 1480 | C |
| Augusta, Maine | WRDO | 1400 | N |
| | WFAU | 1340 | M |
| Aurora, Colo. | KOSI | 1430 | M |
| Aurora, Ill. | WMRO | 1280 | |
| | WKKD | 1580 | |
| Aurora, Mo. | KSWM | 940 | |
| Austin, Minn. | KAUS | 1480 | M |
| | KQAQ | 970 | |
| Austin, Tex. | KNOW | 1490 | A |
| | KASE | 970 | |
| | KTBC | 590 | C |
| | KOKE | 1370 | |
| | KVET | 1300 | M |
| Avalon, Calif. | KBIG | 740 | |
| Avon Park, Fla. | WAVP | 1390 | |
| Avondale Estates, Ga. | WAVO | 1420 | |
| Aztec, N. Mex. | KNDE | 1340 | |
| Babylon, N.Y. | WBAB | 1440 | M |
| | WGLI | 1290 | |
| Bad Axe, Mich. | WLEW | 1340 | |
| Bainbridge, Ga. | WMGR | 930 | |
| | WAZA | 1360 | |
| Baker, Oreg. | KBKR | 1490 | |
| Bakersfield, Calif. | KAFY | 550 | M |
| | KBIS | 970 | |
| | KERN | 1410 | C |
| | KGEE | 1230 | |
| | KUZZ | 800 | |
| | KLYD | 1350 | |
| | KWAC | 1490 | |
| | KPMC | 1560 | A |
| Bellingham, Wash. | KPUG | 1170 | M |
| Baldwinsville, N.Y. | WSEN | 1050 | |
| Ballinger, Tex. | KRUN | 1400 | |
| Baltimore, Md. | WBAL | 1090 | N |
| | WMEW | 940 | |
| | WBMD | 750 | |
| | WCAO | 600 | |
| | WCBM | 680 | C |
| | WFBR | 1300 | |
| | WITH | 1230 | M |
| | WSID | 1010 | |
| | WWIN | 1400 | A-M |
| Bamberg, S.C. | WWBD | 790 | |
| Bangor, Maine | WABI | 910 | A-M |
| | WGUY | 1250 | C |
| | WLBZ | 620 | N |
| Banning, Calif. | KPAS | 1490 | |
| Barbourville, Ky. | WBVL | 950 | |
| Bardstown, Ky. | WBRT | 1320 | |
| Barnesboro, Pa. | WNCC | 950 | |
| Barnwell, S.C. | WBAW | 740 | |
| Barre, Vt. | WSNO | 1450 | |
| Barrie, Ont. | CKBB | 950 | |
| Barstow, Calif. | KWTC | 1230 | A |
| | KIOT | 1310 | |
| Bartlesville, Okla. | KWON | 1400 | M |
| Bartow, Fla. | WBAR | 1460 | |
| Bassett, Va. | WODY | 900 | |
| Bastrop, La. | KTRY | 730 | |
| | KVOB | 1340 | |
| Batavia, N.Y. | WBTA | 1490 | M |
| Batesburg, S.C. | WBLR | 1430 | |
| Batesville, Ark. | KBTA | 1340 | |
| Batesville, Miss. | WBLE | 1290 | |
| Bath, Maine | WMMS | 730 | |
| Bathurst, N.B. | CKBC | 1400 | |
| Baton Rouge, La. | WAIL | 1460 | M |
| | WYNE | 1550 | |
| | WYNK | 1380 | |
| | WIBR | 1300 | |
| | WJBO | 1150 | N |
| | WLCS | 910 | |
| | WXOK | 1260 | |
| Battle Creek, Mich. | WBCK | 930 | |
| | WELL | 1400 | A |
| Baxley, Ga. | WHAB | 1260 | |
| Bay City, Mich. | WBCM | 1440 | A |
| | WWBC | 1250 | |
| Bay City, Tex. | KIOX | 1270 | M |
| Bay Minette, Ala. | WBCA | 1150 | |
| Bayamon, P.R. | WRSJ | 1560 | |
| Baytown, Tex. | KWBA | 1360 | |
| Beacon, N.Y. | WBNR | 1260 | |
| Beardstown, Ill. | WRMS | 790 | |
| Beatrice, Nebr. | KWBE | 1450 | |
| Beaufort, N.C. | WBMA | 1400 | |
| Beaufort, S.C. | WBEU | 960 | |
| | WSIB | 1490 | |
| Beaumont, Tex. | KFDM | 560 | A |
| | KRIC | 1450 | |
| | KTRM | 990 | |
| Beaver Dam, Wis. | WBEV | 1430 | |
| Beaver Falls, Pa. | WBVP | 1230 | |
| Beckley, W. Va. | WJLS | 560 | C |
| | WWNR | 620 | |
| Bedford, Ind. | WBIW | 1340 | |
| Bedford, Pa. | WBFD | 1310 | |
| Bedford, Va. | WBLT | 1350 | |
| Beeville, Tex. | KIBL | 1490 | |
| Belen, N.Mex. | KARS | 860 | |
| Belgrade, Mont. | KGVW | 630 | |
| Bellaire, Ohio | WOMP | 1290 | M |
| Bellefontaine, Ohio | WOHP | 1390 | |
| Bellefonte, Pa. | WBLF | 1330 | |
| Bell Fourche, S.Dak. | KBFS | 1450 | |
| Belle Glade, Fla. | WSWN | 900 | |
| Belleville, Ont. | CJBQ | 800 | |
| Belleville, Ill. | WIBV | 1260 | |
| Bellevue, Wash. | KFKF | 1330 | |
| | KBVU | 1540 | |
| Bellingham, Wash. | KPUG | 1170 | M |
| | KGMI | 790 | A |
| | KOQT | 1550 | |
| Bellingham-Ferndale, Wash. | | | |
| | KENY | 930 | |
| Belmont, N.C. | WCGC | 1270 | M-A |
| Beloit, Wis. | WGEZ | 1490 | M |
| Belton, S.C. | WHPB | 1390 | |
| Belton, Tex. | KTON | 940 | |
| Belzoni, Miss. | WELZ | 1460 | |
| Bemidji, Minn. | KBUN | 1450 | M |
| Bend, Oreg. | KBND | 1110 | A |
| | KGRL | 940 | |
| Bennetsville, S.C. | WBSC | 1550 | M |
| Bennington, Vt. | WBTN | 1370 | |
| Benson, Minn. | KBMO | 1290 | |
| Benson, N.C. | WPYB | 1580 | |
| Benton, Ark. | KBBA | 690 | |
| Benton, Ky. | WCBL | 1290 | |
| Benton Harbor, Mich. | WHFB | 1060 | |
| Berkeley, Calif. | KRE | 1400 | |
| Berkeley Springs, W.Va. | | | |
| | WCST | 1010 | |
| Berlin, N.H. | WMOU | 1230 | |
| Berry Hill, Tenn. | WVOL | 1470 | |
| Berryville, Ark. | KTCN | 1480 | |
| Berwick, Pa. | WBRX | 1280 | |
| Bessemer, Ala. | WYAM | 1450 | |
| Bethesda, Md. | WUST | 1120 | |
| Bethlehem, Pa. | WGPA | 1100 | |
| Beverly, Mass. | WMLO | 1570 | |
| Biddeford, Maine | WIDE | 1400 | M |
| Big Delta, Alaska | WXLL | 980 | |
| Big Lake, Tex. | KBLT | 1290 | |
| Big Rapids, Mich. | WBRN | 1460 | |
| Big Sprg., Tex. | KBST | 1490 | A |
| | KHEM | 1270 | |
| | KBYG | 1400 | M |
| Big Stone Gap, Va. | WLSD | 1220 | |
| Biloxi, Miss. | WLOX | 1490 | M |
| | WVMI | 570 | |
| Billings, Mont. | KBMY | 1240 | M |
| | KGHL | 790 | N |
| | KOOK | 970 | C |
| | KOYN | 910 | |
| | KURL | 730 | |
| Binghamton, N.Y. | WINR | 680 | N |
| | WKOP | 1360 | M |
| | WNBF | 1290 | C |
| Birmingham, Ala. | WAPI | 1070 | N |
| | WBHM | 1550 | |
| | WBRC | 960 | A |
| | WCRT | 1260 | A |
| | WEZB | 1220 | |
| | WENN | 1320 | M |
| | WATV | 900 | C |
| | WSGN | 610 | |
| | WYDE | 850 | |
| | WVOK | 690 | |
| Bisbee, Ariz. | KSUN | 1230 | A |
| Bishop, Calif. | KIBS | 1230 | A |
| Bishopville, S.C. | WAGS | 1380 | |
| Bismarck, N.Dak. | KFYR | 550 | N |
| | KQDI | 1350 | |
| Bismarck-Mandan, N.Dak. | | | |
| | KBOM | 1270 | |
| Black Mountain, N.C. | | | |
| | WBMT | 1350 | |
| Black River Falls, Wis. | | | |
| | WWIS | 1260 | |
| Blackfoot, Idaho | KBLI | 690 | |
| Blackshear, Ga. | WBSG | 1350 | |
| Blackstone, Va. | WKLV | 1440 | |
| Blackwell, Okla. | KLTR | 1580 | |
| Blaine, Wash. | KARI | 550 | |
| Blakely, Ga. | WBBK | 1260 | |
| Blanding, Utah | KUTA | 790 | |
| Blind River, Ont. | CJNR | 730 | |
| Bloomington, Ill. | WJBC | 1230 | A |
| Bloomington, Ind. | WTTS | 1370 | A |
| Bloomsburg, Pa. | WCNR | 930 | |
| | WHLM | 550 | |
| Blountstown, Fla. | WKMK | 1370 | |
| Bluefield, W.Va. | WHIS | 1440 | N |
| | WKOY | 1240 | M |
| Blythe, Calif. | KYOR | 1450 | A |
| Blytheville, Ark. | KLCN | 910 | |
| Boaz, Ala. | WBSA | 1300 | |
| Bogalusa, La. | WIKC | 1490 | N |
| | WBOX | 920 | |
| Boise, Idaho | KATN | 1010 | |
| | KBOI | 950 | C |
| | KEST | 790 | |
| | KGEM | 1140 | M |
| | KIDO | 630 | N |
| | KYME | 740 | |
| Bolivar, Mo. | KBLR | 1550 | |
| Bonham, Tex. | KFYN | 1420 | |
| Boone, Iowa | KFGQ | 1260 | |
| | KWBG | 1590 | |
| Boone, N.C. | WATA | 1450 | |
| Boonville, Ind. | WBNL | 1540 | |
| Boonville, Mo. | KWRT | 1370 | |
| Booneville, Miss. | WBIP | 1400 | A |
| Boonville, N.Y. | WBRV | 900 | |
| Borger, Tex. | KHUZ | 1490 | M |
| | KBBB | 1600 | |
| Boston, Mass. | WBZ | 1030 | |
| | WCOP | 1150 | |
| | WILD | 1090 | |
| | WNAC | 680 | |
| | WEZE | 1260 | N |
| | WEEI | 590 | C |
| | WHDH | 850 | |
| | WMEX | 1510 | |
| | WORL | 950 | M |
| Boulder, Colo. | KBOL | 1490 | |
| Bowie, Tex. | KBAN | 1410 | |
| Bowling Green, Ky. | WKCT | 930 | A |
| | WBGN | 1340 | |
| | WLBJ | 1410 | M |
| Bowl. Green, Ohio | WMGS | 730 | |
| Bozeman, Mont. | KXXL | 1450 | N |
| | KBMN | 1230 | |
| Bradbury Hgts., Md. | WPGC | 1580 | |
| Braddock, Pa. | WLOA | 1550 | |
| Braddocks Heights, Md. | | | |
| | WMHI | 1370 | |
| Bradenton, Fla. | WTRL | 1490 | |
| | WBRD | 1420 | |
| Bradford, Pa. | WESB | 1490 | M |
| Brady, Tex. | KNEL | 1490 | |
| Brainerd, Minn. | KLIZ | 1380 | |
| Brampton, Ont. | CHIC | 1090 | |
| Brandon, Man. | CKX | 1150 | |
| Branson, Mo. | KBHM | 1220 | |
| Brantford, Ont. | CKPC | 1380 | |
| Brattleboro, Vt. | WTSA | 1450 | N |
| | WKVT | 1490 | |
| Brawley, Calif. | KROP | 1300 | A |
| Brazil, Ind. | WITE | 1380 | |
| Breckenridge, Minn. | KBMW | 1450 | |
| Breckenridge, Tex. | KSTB | 1430 | |
| Bremen, Ga. | WWCC | 1440 | |
| Bremerton, Wash. | KBRO | 1490 | |
| Brenham, Tex. | KWHI | 1280 | |
| Brevard, N.C. | WPNF | 1240 | M-N |
| Brewton, Ala. | WEBJ | 1240 | M |
| Bridgeport, Ala. | WBTS | 1480 | |
| Bridgeport, Conn. | WICC | 600 | M |
| | WNAB | 1450 | A-M |
| Bridgeton, N.J. | WSNJ | 1240 | M |
| Bridgewater, N.S. | CKBW | 1000 | |
| Brigham City, Utah | KBUH | 800 | |
| Brighton, Colo. | KBRN | 800 | |
| Brinkley, Ark. | KBRI | 1570 | |
| Bristol, Conn. | WBIS | 1440 | |
| Bristol, Tenn. | WOPI | 1490 | N |
| Bristol, Va. | WCYB | 690 | A |
| | WFHG | 980 | M |
| Brockton, Mass. | WBET | 1460 | |
| | WOKW | 1410 | |
| Brockville, Ont. | CFJR | 1450 | |
| Broken Bow, Nebr. | KCNI | 1280 | |
| Brookfield, Mo. | KGHM | 1470 | |
| Brookhaven, Miss. | WCHJ | 1470 | |
| | WJMB | 1340 | M |
| Brookings, Oreg. | KURY | 910 | |
| Brookings, S.Dak. | KBRK | 1430 | |
| Brookline, Mass. | WBOS | 1600 | |
| Brooksville, Fla. | WWJB | 1450 | |
| Brownfield, Tex. | KTFY | 1300 | |
| Brownsville, Tex. | KBOR | 1600 | A |
| Brownwood, Tex. | KBWD | 1380 | M |
| | KEAN | 1240 | |
| Brunswick, Ga. | WGIG | 1440 | A |
| | WMOG | 1490 | |
| Brunswick, Maine | WCME | 900 | |
| Bryan, Tex. | KORA | 1240 | M |
| | WTAW | 1150 | |
| Buckhannon, W.Va. | WBUC | 1460 | |
| Buffalo, N.Y. | WBEN | 930 | C |
| | WYSL | 1400 | |
| | WEBR | 970 | M |
| | WGR | 550 | N |
| | WKBW | 1520 | N |
| | WWOL | 1120 | A |
| Buffalo, Wyo. | KBBS | 1450 | |
| Buford, Ga. | WDMF | 1460 | |
| Burbank, Calif. | KBLA | 1490 | |
| Burley, Idaho | KBAR | 1230 | A-M |
| Burlington, Iowa | KBUR | 1490 | A |
| Burlington, N.C. | WBBB | 920 | M |
| | WBAG | 1150 | |
| Burlington, Vt. | WCAX | 620 | N |
| | WDOT | 1400 | |
| | WJOY | 1230 | A |
| Burnett, Tex. | KTSL | 1340 | |
| Burns, Oreg. | KRNS | 1230 | |
| Butler, Ala. | WPRN | 1220 | |
| Butler, Mo. | KMAM | 1530 | |
| Butler, Pa. | WBUT | 1050 | |
| | WISR | 680 | |
| Butte, Mont. | KBOW | 1490 | C |
| | KOPR | 550 | M |
| | KXLF | 1370 | N |
| Cabano, Que. | CJAF | 1340 | |
| Cadillac, Mich. | WATT | 1240 | M |
| Caguas, P.R. | WNEL | 1430 | |
| | WVJP | 1110 | |
| Cairo, Ga. | WGRA | 790 | |
| Cairo, Ill. | WKRO | 1490 | |
| Calais, Maine | WQDY | 1230 | N |
| Caldwell, Idaho | KCID | 1490 | |
| | KBGN | 910 | |
| Calera, Ala. | WBYE | 1370 | |
| Calexico, Calif. | KICO | 1490 | A |
| Calgary, Alta. | CFAC | 960 | |
| | CBX | 1010 | |
| | CFCN | 1060 | |
| | CKXL | 1140 | |
| Calhoun, Ga. | WCGA | 900 | |
| Cambridge, Md. | WCEM | 1240 | |
| Cambridge, Mass. | WTAO | 740 | A |
| Cambridge, Ohio | WILE | 1270 | |
| Camden, Ark. | KAMD | 910 | |
| Camden, N.J. | WCAM | 1310 | |
| | WKDN | 800 | |
| Camden, S. C. | WACA | 1590 | |
| Camden, Tenn. | WFWL | 1220 | |
| Cameron, Tex. | KMIL | 1330 | |
| Camilla, Ga. | WCLB | 1220 | |
| Campbell, Ohio | WHOT | 1330 | |
| Campbellsville, Ky. | WTCO | 1450 | |
| Campbellton, N.B. | CKNB | 950 | |
| Camrose, Alta. | CFCW | 1230 | |
| Canandaigua, N.Y. | WCGR | 1550 | |
| Canon City, Colo. | KRLN | 1400 | M |
| Canonsburg, Pa. | WARO | 540 | |
| Canton, Ga. | WCHK | 1290 | |
| Canton, Ill. | WBYS | 1560 | |
| Canton, Miss. | WDOB | 1370 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Canton, N.C. | WWIT | 970 | |
| Canton, Ohio | WCNS | 900 | M |
| | WHOF | 1060 | |
| | WHBC | 1480 | A |
| Canyon, Tex. | KVPH | 1550 | |
| Cape Girardeau, Mo. | KFVS | 960 | |
| | KGMO | 1550 | |
| Carbondale, Ill. | WCIL | 1020 | |
| Carbondale, Pa. | WCDL | 1440 | |
| Caribou, Maine | WFST | 600 | |
| Carlisle, Pa. | WHYL | 960 | |
| Carlsbad, N.Mex. | KAVE | 1240 | C |
| | KPBM | 740 | |
| Carmel, Calif. | KRML | 1410 | |
| Carmi, Ill. | WROY | 1460 | |
| Carnegie, Pa. | WZUM | 1590 | |
| Caro, Mich. | WWRO | 1360 | |
| Carrington, N.Dak. | KDAK | 1600 | |
| Carrizo Springs, Tex. | KBEN | 1450 | |
| Carroll, Iowa | KCIM | 1380 | |
| Carrollton, Ala. | WRAG | 590 | |
| Carrollton, Ga. | WLBB | 1100 | |
| Carrollton, Mo. | KAOL | 1430 | |
| Carson City, Nev. | KPTL | 1300 | |
| Cartersville, Ga. | WBHF | 1450 | M |
| | WKRW | 1270 | |
| Carthage, Ill. | WCAZ | 990 | |
| Carthage, Mo. | KDMO | 1490 | |
| Carthage, Tenn. | WRKM | 1350 | |
| Carthage, Tex. | KGAS | 1590 | |
| Caruthersville, Mo. | KCRV | 1370 | |
| Casa Grande, Ariz. | KPIN | 1260 | |
| Casper, Wyo. | KTWO | 1470 | C |
| | KATI | 1400 | |
| | KVOC | 1230 | A-M |
| Cayce, S.C. | WCAY | 620 | C |
| Cedar City, Utah | KSUB | 590 | C |
| Cedar Falls, Iowa | KCFI | 1250 | |
| Cedar Rapids, Iowa | KCRG | 1600 | A |
| | KHAK | 1380 | |
| | KPIG | 1450 | |
| | WMT | 600 | C |
| Cedartown, Ga. | WGAA | 1340 | |
| Center, Ala. | WEIS | 990 | |
| Center, Tex. | KDET | 930 | |
| Centerville, Iowa | KCOG | 1400 | |
| Centerville, Tenn. | WHLP | 1570 | |
| Centerville, Utah | KBBC | 1600 | |
| Central City, Ky. | WNES | 1050 | |
| | WMTA | 1380 | |
| Centralia, Ill. | WCNT | 1210 | |
| Centralia & Chehalis, Wash. | KELA | 1470 | |
| Centreville, Miss. | WGLC | 1580 | |
| Chadburn, N.C. | WVOE | 1590 | |
| Chadron, Nebr. | KCSR | 1450 | |
| Chambersburg, Pa. | WCHA | 800 | |
| | WCBG | 1590 | |
| Champaign, Ill. | WDWS | 1400 | C |
| Chanute, Kans. | KCRB | 1460 | |
| Chapel Hill, N.C. | WCHL | 1360 | |
| Charleroi, Pa. | WESA | 940 | |
| Charles City, Iowa | KCHA | 1580 | |
| Charleston, Ill. | WEIC | 1270 | |
| Charleston, Mo. | KCHR | 1350 | |
| Charleston, S.C. | WCSC | 1390 | C |
| | WOKE | 1340 | A-M |
| | WPAL | 730 | |
| | WQSN | 1450 | |
| | WTMA | 1250 | N |
| Charleston, W.Va. | WCAW | 680 | |
| | WCHS | 580 | C |
| | WTGR | 1490 | A |
| | WKAZ | 950 | N |
| | WTIP | 1240 | M |
| | WXVA | 1550 | |
| Charlotte, Mich. | WCER | 1390 | |
| Charlotte, N.C. | WBT | 1100 | C |
| | WAYS | 610 | M |
| | WGIV | 1600 | |
| | WKTC | 1310 | |
| | WSOC | 930 | M |
| | WIST | 1240 | N |
| | WWOK | 1480 | |
| Charlotte Amalie, V.I. | WSTA | 1340 | |
| | WBNB | 1000 | |
| Charlottesville, Va. | WCHV | 1260 | A |
| | WELK | 1010 | |
| | WINA | 1400 | M |
| Charlottetown, P.E.I. | CFCY | 630 | |
| Chase City, Va. | WMEK | 980 | |
| Chatham, Ont. | CFCO | 630 | |
| Chattanooga, Tenn. | WMOC | 1450 | M |
| | WAPO | 1150 | A-M |
| | WDEF | 1370 | N |
| | WDOD | 1310 | C |
| | WDXB | 1490 | |
| | WNOO | 1260 | |
| Cheboygan, Mich. | WCBY | 1240 | |
| Cheektowaga, N.Y. | WNIA | 1230 | |
| Chehalis, Wash. | KITI | 1420 | |
| Chelan, Wash. | KOZI | 1220 | |
| Cheraw, S.C. | WCRE | 1420 | |
| Cherokee, Iowa | KCHE | 1440 | |
| Chester, Ill. | KSGM | 980 | |
| Chester, Pa. | WEEZ | 1590 | |
| | WVCH | 740 | |
| Chester, S.C. | WGCD | 1490 | |
| Cheyenne, Wyo. | KFBC | 1240 | A |
| | KCHY | 1590 | |
| | KRAE | 1480 | |
| | KVWO | 1370 | M |
| Chicago, Ill. | WAAF | 950 | |
| | WAIT | 820 | M |
| | WBBM | 780 | C |
| | WCFL | 1000 | |
| | WCRW | 1240 | |
| | WEDC | 1240 | |
| | WGES | 1390 | |
| | WGN | 720 | M |
| | WIND | 560 | |
| | WJJD | 1160 | |
| | WLS | 890 | A |
| | WMAQ | 670 | N |
| | WMBI | 1110 | |
| | WSBC | 1240 | |
| Chicago Hgts., Ill. | WMPP | 1470 | |
| | WCGO | 1600 | |
| Chickasha, Okla. | KWCO | 1560 | |
| Chico, Calif. | KHSL | 1290 | C |
| | KPAY | 1060 | |
| Chicopee, Mass. | WACE | 730 | |
| Chicoutimi, Que. | CBJ | 1580 | |
| | CJMT | 1420 | |
| Childress, Tex. | KCTX | 1510 | |
| Chillicothe, Mo. | KCHI | 1010 | |
| Chillicothe, Ohio | WBEX | 1490 | A |
| | WCHI | 1350 | |
| Chilliwack, B.C. | CHWK | 1270 | |
| Chipley, Fla. | WBGC | 1240 | |
| Chippewa Falls, Wis. | WAXX | 1150 | |
| Christiansburg, Va. | WBCR | 1260 | |
| Christiansted, V.I. | WIVI | 970 | |
| Church Hill, Tenn. | WMCH | 1260 | |
| Churchill, Man. | CHFC | 1230 | |
| Cicero, Ill. | WHFC | 1450 | |
| Cincinnati, Ohio | WCKY | 1530 | M |
| | WCIN | 1480 | |
| | WCPO | 1230 | |
| | WKRC | 550 | C |
| | WLW | 700 | N-A |
| | WSAI | 1360 | |
| Clanton, Ala. | WKLF | 980 | |
| Clare, Mich. | WCRM | 990 | |
| Claremont, N.H. | WTSV | 1230 | |
| Claremore, Okla. | KWPR | 1270 | |
| Clarion, Pa. | WWCH | 1300 | |
| Clarksburg, W.Va. | WBOY | 1400 | N |
| | WHAR | 1340 | M |
| | WPDX | 750 | |
| Clarksdale, Miss. | WROX | 1450 | M |
| | WKDL | 1600 | |
| Clarksville, Ark. | KLYR | 1360 | |
| Clarksville, Tenn. | WJZM | 1400 | M |
| | WDXN | 540 | |
| Clarksville, Tex. | KCAR | 1350 | |
| Claxton, Ga. | WCLA | 1470 | |
| Clayton, Ga. | WGHC | 1570 | |
| Clayton, Mo. | KXLW | 1320 | |
| | KFUO | 850 | |
| Clayton, N.Mex. | KLMX | 1450 | |
| Clearfield, Pa. | WCPA | 900 | |
| Clearwater, Fla. | WTAN | 1340 | |
| | WAZE | 860 | |
| Cleburne, Tex. | KCLE | 1120 | |
| Clermont, Fla. | WSLG | 1340 | |
| Cleveland, Ga. | WRWH | 1350 | |
| Cleveland, Miss. | WCLD | 1490 | |
| | WDSK | 1410 | |
| Cleveland, Ohio | KYW | 1100 | |
| | WDOK | 1260 | M |
| | WERE | 1300 | |
| | WGAR | 1220 | C |
| | WHK | 1420 | |
| | WABQ | 1540 | |
| | WJW | 850 | N |
| Cleveland, Tenn. | WBAC | 1340 | M |
| | WCLE | 1570 | |
| Cleveland, Tex. | KVLB | 1410 | |
| Cleve. Hgts., Ohio | WJMO | 1490 | A |
| Clewiston, Fla. | WOWY | 1590 | |
| Clifton, Ariz. | KCLF | 1400 | A |
| Clifton Forge, Va. | WCFV | 1230 | M |
| Clincho, Va. | WDIC | 1430 | |
| Clinton, Ill. | WHOW | 1520 | |
| Clinton, Iowa | KCLN | 1390 | |
| | KROS | 1340 | M |
| Clinton, Mo. | KDKD | 1280 | |
| Clinton, N.C. | WRRZ | 880 | A |
| Clinton, Okla. | KWOE | 1320 | |
| Clinton, S.C. | WPCC | 1410 | |
| Clinton, Tenn. | WYSH | 1380 | |
| Cloquet, Minn. | WKLK | 1230 | |
| Clovis, N.Mex. | KCLV | 1240 | |
| | KVER | 980 | |
| Coachella, Calif. | KCHV | 970 | |
| Coalinga, Calif. | KBMX | 1470 | |
| Coatesville, Pa. | WCOJ | 1420 | |
| Cocoa, Fla. | WKKO | 860 | |
| | WEZY | 1350 | |
| Cocoa Beach, Fla. | WRKT | 1300 | |
| Cody, Wyo. | KODI | 1400 | A |
| Coeur d'Alene, Ida. | KVNI | 1240 | M |
| Coffeyville, Kans. | KGGF | 690 | A |
| Colby, Kans. | KXXX | 790 | |
| Coldwater, Mich. | WTVB | 1590 | |
| Coleman, Tex. | KSTA | 1000 | |
| Colfax, Wash. | KCLX | 1450 | |
| College Park, Ga. | WEAD | 1570 | |
| Colonial Heights, Va. | WPVA | 1290 | |
| Colonial Village, Tenn. | WSKT | 1580 | |
| Colorado City, Tex. | KVMC | 1320 | |
| Colo. Sprgs., Colo. | KRDO | 1240 | |
| | KPIK | 1580 | |
| | KVOR | 1300 | C |
| | KSSS | 740 | |
| | KYSN | 1460 | M |
| Columbia, Ky. | WAIN | 1270 | |
| Columbia, Miss. | WCJU | 1450 | M |
| Columbia, Mo. | KFRU | 1400 | A |
| | KCGM | 1580 | |
| Columbia, Pa. | WCOY | 1580 | |
| Columbia, S.C. | WCOS | 1400 | A |
| | WIS | 560 | N |
| | WOIC | 1320 | C |
| | WNOK | 1230 | M |
| | WQXL | 1470 | |
| Columbia, Tenn. | WMCP | 1280 | |
| | WKRM | 1340 | |
| Columbus, Ga. | WDAK | 540 | N |
| | WRBL | 1420 | C |
| | WGBA | 1270 | M |
| | WCLS | 1580 | |
| | WOKS | 1340 | |
| Columbus, Ind. | WCSI | 1010 | |
| Columbus, Miss. | WACR | 1050 | |
| | WCBI | 550 | M |
| Columbus, Nebr. | KJSK | 900 | |
| Columbus, Ohio | WBNS | 1460 | C |
| | WCOL | 1230 | A |
| | WMNI | 920 | A |
| | WOSU | 820 | |
| | WTVN | 610 | |
| | WVKO | 1580 | |
| Colville, Wash. | KCVL | 1270 | |
| Commerce, Ga. | WJJC | 1270 | |
| Concord, Calif. | KWUN | 1480 | |
| Concord, N.H. | WKXL | 1450 | C |
| Concord, N.C. | WEGO | 1410 | |
| Concordia, Kans. | KNCK | 1390 | |
| | KFRM | 550 | A |
| Conneaut, Ohio | WWOW | 1360 | |
| Connellsville, Pa. | WCVI | 1340 | |
| Connersville, Ind. | WCNB | 1580 | |
| Conroe, Tex. | KMCO | 900 | |
| Conway, Ark. | KCON | 1230 | |
| | KVEE | 1330 | |
| Conway, N.H. | WBNC | 1050 | |
| Conway, S.C. | WLAT | 1330 | M |
| Cookeville, Tenn. | WHUB | 1400 | C |
| | WTPI | 1550 | |
| Coolidge, Ariz. | KCKY | 1150 | C |
| Coos Bay, Oreg. | KOOS | 1230 | M |
| | KYNG | 1420 | |
| Copper Hill, Tenn. | WLSB | 1400 | |
| Coquille, Oreg. | KWRO | 630 | |
| Coral Gables, Fla. | WRIZ | 1550 | |
| | WVCG | 1070 | |
| Corbin, Ky. | WCTT | 680 | M |
| | WYGO | 1330 | |
| Cordele, Ga. | WMJM | 1490 | M |
| Cordova, Alaska | KLAM | 1450 | |
| Corinth, Miss. | WCMA | 1230 | |
| Cornelia, Ga. | WCON | 1450 | |
| Corner Brook, Nfld. | CBY | 790 | |
| | CFCB | 570 | |
| Corning, Ark. | KCCB | 1260 | |
| Corning, N.Y. | WCBA | 1350 | |
| | WCLI | 1450 | A |
| Cornwall, Ont. | CJSS | 1220 | |
| | CFML | 1110 | |
| Corona, Calif. | KBUC | 1370 | |
| Corpus Christi, Tex. | KCTA | 1030 | M |
| | KCCT | 1150 | |
| | KEYS | 1440 | |
| | KRYS | 1360 | N |
| | KSIX | 1230 | A-M |
| | KUNO | 1400 | |
| Corry, Pa. | WOTR | 1370 | |
| Corsicana, Tex. | KAND | 1340 | |
| Cortez, Colo. | KVFC | 740 | |
| Cortland, N.Y. | WKRT | 920 | |
| Corvallis, Oreg. | KOAC | 550 | |
| | KFLY | 1240 | |
| | KLOO | 1350 | |
| Coshocton, Ohio | WTNS | 1560 | |
| Cottage Grove, Ore. | KNND | 1400 | |
| Cottonwood, Ariz. | KVRD | 1240 | |
| Coudersport, Pa. | WFRM | 600 | |
| Council Bluffs, Iowa | KSWI | 1560 | M-A |
| Courtenay, B.C. | CFCP | 1440 | |
| Covington, Ga. | WGFS | 1430 | |
| Covington, La. | WARB | 730 | |
| Covington, Tenn. | WKBL | 1250 | |
| Covington, Va. | WKEY | 1340 | A |
| Cowan, Tenn. | WZYX | 1440 | |
| Craig, Colo. | KRAI | 550 | |
| Cranbrook, B.C. | CKEK | 570 | |
| Crane, Tex. | KCRR | 1380 | |
| Crescent City, Calif. | KPLY | 1240 | |
| | KPOD | 1310 | |
| Creston, Iowa | KSIB | 1520 | |
| Crestview, Fla. | WCNU | 1010 | |
| | WJSB | 1050 | |
| Crewe, Va. | WSVS | 800 | |
| Crockett, Tex. | KIVY | 1290 | |
| Crookston, Minn. | KROX | 1260 | |
| Crossett, Ark. | KAGH | 800 | |
| Crossville, Tenn. | WAEW | 1330 | |
| Crowley, La. | KSIG | 1450 | M |
| Cuero, Tex. | KCFH | 1600 | |
| Cullman, Ala. | WFMH | 1460 | |
| | WKUL | 1340 | |
| Culpeper, Va. | WCVA | 1490 | M |
| Cumberland, Ky. | WCPM | 1280 | |
| Cumberland, Md. | WCUM | 1230 | C |
| | WTBO | 1450 | |
| Cummings, Ga. | WSNE | 1410 | |
| Cushing, Okla. | KUSH | 1600 | |
| Cuyahoga Falls, Ohio | WCVE | 1150 | |
| Cypress Gardens, Fla. | WGTO | 540 | |
| Cynthiana, Ky. | WCYN | 1400 | |
| Dade City, Fla. | WDCF | 1350 | |
| Dadeville, Ala. | WDVC | 910 | |
| Dalhart, Tex. | KXIT | 1410 | |
| Dallas, N.C. | WAAK | 960 | |
| Dallas, Oreg. | KROW | 1460 | |
| Dallas, Tex. | KRLD | 1080 | C |
| | KIXL | 1040 | |
| | KSKY | 660 | |
| | KLIF | 1190 | |
| | WFAA | 570 | A |
| | WFAA | 820 | N |
| | KBOX | 1480 | |
| | WRR | 1310 | M |
| The Dalles, Oreg. | KACI | 1300 | |
| | KODL | 1440 | A |
| Dalton, Ga. | WBLJ | 1230 | M |
| | WRCD | 1430 | |
| Danbury, Conn. | WLAD | 800 | |
| Danville, Ill. | WDAN | 1490 | C |
| | WITY | 980 | |
| Danville, Ky. | WHIR | 1230 | M |
| Danville, Va. | WBTM | 1330 | A |
| | WYPR | 970 | |
| | WDVA | 1250 | M |
| | WILA | 1580 | |
| Darlington, S.C. | WDAR | 1350 | |
| Dauphin, Man. | CKDM | 730 | |
| Davenport, Iowa | WOC | 1420 | N |
| | KWNT | 1580 | |
| | KSTT | 1170 | M |
| Dawson, Ga. | WDWD | 990 | |
| Dawson, Yukon T. | CFYT | 1230 | |
| Dawson Creek, B.C. | CJDC | 560 | |
| Dayton, Ohio | WHIO | 1290 | C |
| | WING | 1410 | |
| | WONE | 980 | |
| | WAVI | 1210 | |
| Dayton, Tenn. | WDNT | 1280 | |
| Daytona Beach, Fla. | WNDB | 1150 | M-A |
| | WMFJ | 1450 | |
| | WROD | 1340 | |
| Deadwood, S.Dak. | KDSJ | 980 | |
| Dearborn, Mich. | WKMH | 1310 | M |
| Decatur, Ala. | WHOS | 800 | |
| | WAJF | 1490 | |
| | WMSL | 1400 | M |
| Decatur, Ga. | WGUN | 1010 | A |
| Decatur, Ill. | WDZ | 1050 | |
| | WSOY | 1340 | C |
| Decorah, Iowa | KDEC | 1240 | |
| | KWLC | 1240 | |
| Deerfield, Va. | WABH | 1150 | |
| Defiance, Ohio | WONW | 1280 | |
| De Funiak Springs, Fla. | WDSP | 1280 | |
| | WZEP | 1460 | |
| De Kalb, Ill. | WLBK | 1360 | |
| De Land, Fla. | WJBS | 1490 | |
| | WOOO | 1310 | |
| Delano, Calif. | KCHJ | 1010 | |
| Delaware, Ohio | WDLE | 1550 | |
| Delray, Bch., Fla. | WDBF | 1420 | |
| Del Rio, Tex. | KDLK | 1230 | |
| Delta, Colo. | KDTA | 1400 | |
| Deming, N.Mex. | KOTS | 1230 | |
| Demopolis, Ala. | WXAL | 1400 | M |
| Denham Sprgs., La. | WLBI | 1220 | |
| Denison, Iowa | KDSN | 1580 | |
| Denison, Tex. | KDSX | 950 | |
| Denton, Tex. | KDNT | 1440 | |
| Denver, Colo. | KDEN | 1340 | |
| | KFML | 1390 | |
| | KHOW | 630 | A |
| | KIMN | 950 | A |
| | KLIR | 990 | |
| | KLZ | 560 | C |
| | KBTR | 710 | |
| | KOA | 850 | N |
| | KPOF | 910 | |
| | KFSC | 1220 | |
| | KTLN | 1280 | |
| De Queen, Ark. | KDQN | 1390 | |
| DeRidder, La. | KDLA | 1010 | |
| Des Moines, Iowa | KCBC | 1390 | A |
| | KIOA | 940 | M |
| | KRNT | 1350 | C |
| | KSO | 1460 | |
| | KWKY | 1150 | M |
| | WHO | 1040 | N |
| Detroit, Mich. | WCAR | 1130 | |
| | WJBK | 1500 | |
| | WJLB | 1400 | |
| | WJR | 760 | |
| | WWJ | 950 | N |
| | WXYZ | 1270 | A |
| Detroit Lakes, Minn. | KDLM | 1340 | |
| Devils Lake, N.Dak. | KDLR | 1240 | M |
| Dexter, Mo. | KDEX | 1590 | |
| Diboll, Tex. | KSPL | 1260 | |
| Dickinson, N.Dak. | KDIX | 1230 | |
| Dickson, Tenn. | WDKN | 1260 | |
| Dillon, Mont. | KDBM | 800 | |
| Dillon, S.C. | WDSC | 800 | A |
| Dinuba, Calif. | KRDU | 1130 | |
| Dixon, Ill. | WIXN | 1460 | |
| Dodge City, Kans. | KGNO | 1370 | M |
| | KEDD | 1550 | |
| Dothan, Ala. | WAGF | 1320 | |
| | WDIG | 1450 | M |
| | WOOF | 560 | |
| Douglas, Ariz. | KAWT | 1450 | M |
| | KAPR | 930 | |
| Douglas, Ga. | WDMG | 860 | |
| Douglas, Wyo. | KWIV | 1050 | |
| Dover, Del. | WDOV | 1410 | M |
| | WKEN | 1600 | A |
| Dover, N.H. | WTSN | 1270 | |
| Dover, N.J. | WRAN | 1510 | |
| Dover, Ohio | WJER | 1450 | |
| Dowagiac, Mich. | WDOW | 1440 | |
| Doylestown, Pa. | WBUX | 1570 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Drumheller, Alta. | CJDV | 910 | |
| Drummondville, Que. | CHRD | 1340 | |
| Dublin, Ga. | WMLT | 1330 | |
| | WXLI | 1230 | |
| Du Bois, Pa. | WCED | 1420 | C |
| Dubuque, Iowa | KDTH | 1370 | A |
| | WDBQ | 1490 | M |
| Duluth, Minn. | KDAL | 610 | C |
| | WEBC | 560 | |
| | KAOH | 1390 | |
| Dumas, Tex. | KDDD | 800 | |
| Duncan, Okla. | KRHD | 1350 | M |
| Dundalk, Md. | WAYE | 860 | |
| | WEBB | 1360 | |
| Dundee, N.Y. | WFLR | 1570 | |
| Dunkirk, N.Y. | WDOE | 1410 | |
| Dunn, N.C. | WCKB | 780 | |
| Du Quoin, Ill. | WDQN | 1580 | |
| Durango, Colo. | KIUP | 930 | |
| | KDGO | 1240 | |
| Durant, Okla. | KSFO | 750 | |
| Durham, N.C. | WDNC | 620 | C |
| | WSRC | 1410 | |
| | WSSB | 1490 | |
| | WTIK | 1310 | A |
| Dyersburg, Tenn. | WDSG | 1450 | |
| | WTRO | 1330 | |
| Eagle Pass, Tex. | KEPS | 1270 | |
| Eagle River, Wis. | WERL | 950 | |
| Easley, S.C. | WELP | 1360 | |
| E. Grand Forks, Minn. | KRAD | 1590 | |
| Eastland, Tex. | KERC | 1590 | |
| E. Lansing, Mich. | WKAR | 870 | |
| E. Liverpool, Ohio | WOHI | 1490 | A |
| East Longmeadow, Mass. | WTYM | 1600 | |
| Eastman, Ga. | WPFE | 1580 | |
| E. Moline, Ill. | WDLM | 960 | |
| E. Point, Ga. | WTJH | 1260 | |
| E. St. Louis, Ill. | WBBR | 1490 | A |
| Easton, Md. | WEMD | 1460 | |
| Easton, Pa. | WEEX | 1230 | |
| | WEST | 1400 | N |
| Eatontown, N.J. | WHTG | 1410 | |
| Eau Claire, Wis. | WEAQ | 790 | N |
| | WBIZ | 1400 | M |
| | WECL | 1050 | |
| Eau Gallie, Fla. | WMEG | 920 | |
| Ebensburg, Pa. | WEND | 1580 | |
| Edenton, N.C. | WCDJ | 1260 | |
| Edinburg, Tex. | KURV | 710 | |
| Edmonds, Wash. | KGDN | 630 | |
| Edmonton, Alta. | CBXA | 740 | |
| | CFRN | 1260 | |
| | CHED | 1080 | |
| | CHFA | 680 | |
| | CJCA | 930 | |
| | CKUA | 580 | |
| Edmundston, N.C. | CJEM | 570 | |
| Effingham, Ill. | WCRA | 1090 | |
| Elba, Ala. | WELB | 1350 | |
| Elberton, Ga. | WSGC | 1400 | |
| El Cajon, Calif. | KDED | 910 | A |
| El Campo, Tex. | KULP | 1390 | |
| El Centro, Calif. | KXO | 1230 | M |
| | KAMP | 1430 | |
| El Dorado, Ark. | KDMS | 1290 | |
| | KELD | 1400 | A |
| Eldorado, Kans. | KBTO | 1360 | |
| Eldorado Springs, Mo. | KESM | 1580 | |
| Elgin, Ill. | WRMN | 1410 | |
| Elizabeth City, N.C. | WCNC | 1240 | |
| | WGAI | 560 | M |
| Elizabethton, Tenn. | WBEJ | 1240 | |
| Elizabethtown, Ky. | WIEL | 1400 | |
| Elizabethtown, N.C. | WBLA | 1440 | |
| Elizabethtown, Pa. | WEZN | 1600 | |
| Elk City, Okla. | KBEK | 1240 | A |
| Elkhart, Ind. | WTRC | 1340 | N |
| | WCMR | 1270 | |
| Elkin, N.C. | WIFM | 1540 | |
| Elkins, W.Va. | WDNE | 1240 | |
| Elko, Nev. | KELK | 1240 | M |
| Ellensburg, Wash. | KXLE | 1240 | |
| Ellsworth, Me. | WDEA | 1350 | |
| Elmira, N.Y. | WELM | 1410 | A-C |
| | WENY | 1230 | N |
| Elmira Heights-Horseheads, N.Y. | WEHH | 1590 | M |
| El Paso, Tex. | KROD | 600 | C |
| | KELP | 920 | |
| | KHEY | 690 | |
| | KINT | 1590 | |
| | KIZZ | 1150 | |
| | KSET | 1340 | M |
| | KTSM | 1380 | N |
| El Reno, Okla. | KELR | 1460 | |
| Ely, Minn. | WELY | 1450 | M |
| Ely, Nev. | KELY | 1230 | |
| Elyria, Ohio | WEOL | 930 | |
| Eminence, Ky. | WSTL | 1600 | |
| Emporia, Kans. | KVOE | 1400 | |
| Emporia, Va. | WEVA | 860 | |
| Emporium, Pa. | WLEM | 1250 | |
| Endicott, N.Y. | WENE | 1430 | A |
| Englewood, Colo. | KGMC | 1150 | |
| Englewood, Fla. | WENG | 1530 | |
| Enid, Okla. | KCRC | 1390 | A |
| | KGWA | 960 | M |
| Enterprise, Ala. | WIRB | 600 | |
| Enterprise, Oreg. | KWVR | 1340 | |
| Ephrata, Pa. | WGSA | 1310 | |
| Ephrata, Wash. | KULF | 790 | |
| Erie, Pa. | WWYN | 1260 | A |
| | WICU | 1330 | N |
| | WJET | 1400 | M |
| | WLEU | 1450 | |
| Erwin, Tenn. | WEMB | 1420 | |
| Escanaba, Mich. | WDBC | 680 | M |
| | WLST | 600 | A |
| Escondido, Calif. | KOWN | 1450 | |
| Estevan, Sask. | CJSL | 1280 | |
| Estherville, Iowa | KLIL | 1340 | |
| Etowah, Tenn. | WCPH | 1220 | |
| Eufaula, Ala. | WULA | 1240 | M |
| Eugene, Oreg. | KORE | 1450 | M |
| | KPIR | 1500 | |
| | KASH | 1600 | A |
| | KATR | 1320 | |
| | KERG | 1280 | C |
| | KUGN | 590 | N |
| Eunice, La. | KEUN | 1490 | M |
| Eureka, Calif. | KINS | 980 | C |
| | KDAN | 790 | |
| | KRED | 1480 | M |
| Eustis, Fla. | WLCO | 1240 | |
| Evanston, Ill. | WEAW | 1330 | |
| | WNMP | 1590 | |
| Evanston, Wyo. | KLUK | 1240 | |
| Evansville, Ind. | WROZ | 1400 | C |
| | WGBF | 1280 | N |
| | WIKY | 820 | |
| | WJPS | 1330 | A |
| Eveleth, Minn. | WEVE | 1340 | M |
| Everett, Wash. | KRKO | 1380 | |
| | KWYZ | 1230 | |
| Evergreen, Ala. | WBLO | 1470 | |
| Fairbanks, Alaska | KFAR | 610 | A-M-N |
| | KFRB | 900 | C-A |
| Fairbury, Nebr. | KGMT | 1310 | |
| Fairfax, Va. | WEEL | 1310 | |
| Fairfield, Ill. | WFIW | 1390 | |
| Fairfield, Iowa | KMCD | 1570 | |
| Fairhope, Ala. | WABF | 1220 | |
| Fairmont, Minn. | KSUM | 1370 | M |
| Fairmont, N.C. | WFMD | 860 | |
| Fairmont, W.Va. | WMMN | 920 | C |
| | WTCS | 1490 | A |
| Fajardo, P.R. | WMDD | 1490 | |
| Falfurrias, Tex. | KPSD | 1260 | |
| Fall River, Mass. | WALE | 1400 | M |
| | WSAR | 1480 | A |
| Falls Church, Va. | WFAX | 1220 | |
| Falls City, Nebr. | KTNC | 1230 | |
| Fargo, N.Dak. | WDAY | 970 | N |
| | KFNW | 900 | |
| | KUTT | 1550 | |
| | KFGO | 790 | A |
| Faribault, Minn. | KDHL | 920 | |
| Farmington, Me. | WKTJ | 1380 | |
| Farmington, Mo. | KREI | 800 | |
| Farmington, N.M. | KENN | 1390 | |
| | KWYK | 960 | |
| | KRZE | 1280 | |
| Farmville, N.C. | WBTL | 1050 | |
| | WFAG | 1250 | |
| Farmville, Va. | WFLO | 870 | |
| Farrell, Pa. | WFAR | 1470 | |
| Farwell, Tex. | KZOL | 1570 | |
| Fayette, Ala. | WWWF | 990 | |
| Fayetteville, Ark. | KHOG | 1440 | |
| | KFAY | 1250 | M |
| Fayetteville, N.C. | WFAI | 1230 | C |
| | WFNC | 940 | M |
| | WFLB | 1490 | A |
| | WIDU | 1600 | |
| Fayetteville, Tenn. | WEKR | 1240 | M |
| Fergus Falls, Minn. | KOTE | 1250 | M |
| Fernandina Beach, Fla. | WPAP | 1570 | |
| Ferriday, La. | KFNV | 1600 | |
| Festus, Mo. | KJCF | 1400 | |
| | KXEN | 1010 | |
| Findlay, Ohio | WFIN | 1330 | |
| Fisher, W.Va. | WELD | 690 | A |
| Fitchburg, Mass. | WEIM | 1280 | M |
| | WFGM | 960 | |
| Fitzgerald, Ga. | WBHB | 1240 | M |
| Flagstaff, Ariz. | KCLS | 600 | N |
| | KFGT | 1000 | |
| | KVNA | 690 | A |
| | KEOS | 1290 | |
| Flat River, Mo. | KFMO | 1240 | M |
| Flin Flon, Man. | CFAR | 590 | |
| Flint, Mich. | WFDF | 910 | N |
| | WTRX | 1330 | A |
| | WAMM | 1420 | |
| | WMRP | 1570 | |
| | WKMF | 1470 | M |
| | WTAC | 600 | A |
| Flomaton, Ala. | WTCB | 990 | |
| Florence, Ala. | WJOI | 1340 | M |
| | WOLS | 1230 | |
| | WOWL | 1240 | A |
| Florence, S.C. | WJMX | 970 | A |
| | WYNN | 540 | |
| Floydada, Tex. | KFLD | 900 | |
| Foley, Ala. | WHEP | 1310 | |
| Fond du Lac, Wis. | KFIZ | 1450 | M |
| Fordyce, Ark. | KBJT | 1570 | |
| Forest, Miss. | WMAG | 860 | |
| Forest City, N.C. | WBBO | 780 | |
| | WAGY | 1320 | |
| Forest Grove, Oreg. | KGGG | 1570 | |
| Forrest City, Ark. | KXJK | 950 | |
| Ft. Bragg, Calif. | KDAC | 1230 | |
| Ft. Collins, Colo. | KCOL | 1410 | A |
| | KZIX | 600 | |
| Ft. Dodge, Iowa | KVFD | 1400 | M |
| | KWMT | 540 | A |
| Ft. Frances, Ont. | CFOB | 800 | |
| Ft. Knox, Ky. | WSAC | 1470 | |
| Ft. Lauderdale, Fla. | WFTL | 1400 | |
| | WWIL | 1580 | |
| Ft. Madison, Iowa | KXGI | 1360 | |
| Ft. Morgan, Colo. | KFTM | 1400 | |
| Ft. Myers, Fla. | WINK | 1240 | C |
| | WMYR | 1410 | |
| Ft. Payne, Ala. | WFPA | 1400 | |
| | WZOB | 1250 | |
| Ft. Pierce, Fla. | WARN | 1330 | |
| | WIRA | 1400 | |
| Ft. Scott, Kans. | KMDO | 1600 | |
| Ft. Simpson, NWT. | CFMR | 1490 | |
| Ft. Smith, Ark. | KFPW | 1230 | C |
| | KFSA | 950 | A |
| | KTCS | 1410 | M |
| | KWHN | 1320 | |
| Ft. Stockton, Tex. | KFST | 860 | |
| Ft. Valley, Ga. | WFPM | 1150 | |
| Ft. Walton Beach, Fla. | WNUE | 950 | |
| | WFTW | 1260 | |
| Ft. Wayne, Ind. | WGL | 1250 | A |
| | WOWO | 1190 | |
| | WANE | 1450 | C |
| | WKJG | 1380 | N |
| Ft. William, Ont. | CKPR | 580 | |
| | CJLX | 800 | |
| Ft. Worth, Tex. | KJIM | 870 | |
| | KCUL | 1540 | |
| | KFJZ | 1270 | |
| | KNOK | 970 | |
| | WBAP | 570 | A |
| | WBAP | 820 | N |
| | KXOL | 1360 | |
| Fostoria, Ohio | WFOB | 1430 | |
| Fountain City, Tenn. | WFCT | 1430 | |
| | WROL | 1490 | |
| Fountain Inn, S.C. | WFIS | 1600 | |
| Fowler, Calif. | KLIP | 1220 | |
| Framingham, Mass. | WKOX | 1190 | |
| Frankfort, Ind. | WILO | 1570 | |
| Frankfort, Ky. | WFKY | 1490 | M |
| Franklin, Ky. | WFKN | 1220 | |
| Franklin, La. | KFRA | 1390 | |
| Franklin, N.C. | WFSC | 1050 | |
| Franklin, Pa. | WFRA | 1430 | |
| Franklin, Tenn. | WAGG | 950 | |
| Franklin, Va. | WYSR | 1250 | |
| Frederick, Md. | WFMD | 930 | C |
| Frederick, Okla. | KTAT | 1570 | |
| Fredericksburg, Tex. | KNAF | 910 | M |
| Fredericksburg, Va. | WFVA | 1230 | A |
| | WFLS | 1350 | |
| Fredericton, N.B. | CFNB | 550 | |
| Fredonia, N.Y. | WBUZ | 1570 | |
| Freeport, Ill. | WFRL | 1570 | |
| Freeport, N.Y. | WGBB | 1240 | |
| Freeport, Tex. | KBRZ | 1460 | |
| Fremont, Mich. | WBFC | 1490 | |
| | WSHN | 1550 | |
| Fremont, Nebr. | KHUB | 1340 | |
| Fremont, Ohio | WFRO | 900 | |
| Fresno, Calif. | KARM | 1430 | A |
| | KBIF | 900 | |
| | KIRV | 1510 | |
| | KEAP | 980 | |
| | KFRE | 940 | C |
| | KGST | 1600 | |
| | KMAK | 1340 | |
| | KMJ | 580 | N |
| | KYND | 1300 | |
| Front Royal, Va. | WFTR | 1450 | M |
| Frostburg, Md. | WFRB | 740 | |
| Fulton, Ky. | WFUL | 1270 | |
| Fulton, Mo. | KFAL | 900 | |
| Fulton, N.Y. | WOSC | 1300 | |
| Fuquay Sprgs., N.C. | WFVG | 1460 | |
| Gadsden, Ala. | WGAD | 1350 | A |
| | WETD | 930 | M |
| | WAAX | 570 | |
| Gaffney, S.C. | WFGN | 1570 | |
| Gainesville, Fla. | WDVH | 980 | |
| | WGGG | 1230 | M |
| | WRUF | 850 | N |
| Gainesville, Ga. | WGGA | 550 | C |
| | WDUN | 1240 | A |
| | WLBA | 1580 | |
| Gainesville, Tex. | KGAF | 1580 | |
| Gaithersburg, Md. | WHMC | 1150 | |
| Galax, Va. | WBOB | 1360 | M |
| Galesburg, Ill. | WGIL | 1400 | |
| | WAIK | 1590 | A |
| Gallatin, Tenn. | WHIN | 1010 | |
| Gallipolis, Ohio | WJEH | 990 | |
| Gallup, N. Mex. | KGAK | 1330 | A |
| | KYVA | 1230 | |
| Galt, Ont. | CKGR | 1110 | |
| Galveston, Tex. | KILE | 1400 | |
| | KGBC | 1540 | |
| Gander, Nfld. | CBG | 1450 | |
| Garden City, Kans. | KNCO | 1050 | |
| | KIUL | 1240 | M |
| Gardner, Mass. | WGAW | 1340 | |
| Gary, Ind. | WWCA | 1270 | |
| | WGRY | 1370 | |
| Gastonia, N.C. | WGNC | 1450 | A |
| | WLTC | 1370 | |
| Gate City, Va. | WGAT | 1050 | |
| Gaylord, Mich. | WATC | 900 | |
| Geneva, Ala. | WGEA | 1150 | |
| Geneva, Ill. | WGSB | 1480 | |
| Geneva, N.Y. | WGVA | 1240 | A |
| Georgetown, Del. | WJWL | 900 | |
| Georgetown, Ky. | WAXU | 1580 | |
| Georgetown, S.C. | WGTN | 1400 | M |
| Gettysburg, Pa. | WGET | 1320 | M |
| Gillette, Wyo. | KIML | 1490 | |
| Gilroy, Calif. | KPER | 1290 | |
| Gladewater, Tex. | KEES | 1430 | |
| Glasgow, Ky. | WKAY | 1490 | |
| Glasgow, Mont. | KLTZ | 1240 | |
| Glendale, Ariz. | KRUX | 1360 | |
| Glendale, Calif. | KIEV | 870 | |
| Glendive, Mont. | KXGN | 1400 | |
| Glens Falls, N.Y. | WSET | 1410 | |
| | WWSC | 1450 | A |
| Glenville, Ga. | WKIG | 1580 | |
| Glenwood Sprgs., Colo. | KGLN | 980 | M |
| Globe, Ariz. | KZOW | 1240 | A |
| Gloucester, Va. | WDDY | 1420 | |
| Gloversville-Johnston, N.Y. | WENT | 1340 | C |
| Gold Beach, Oreg. | KBLY | 1220 | |
| Golden, Colo. | KICM | 1250 | |
| Golden Valley, Minn. | KEVE | 1440 | M |
| | KUXL | 1570 | |
| Goldsboro, N.C. | WFMC | 730 | |
| | WGBR | 1150 | A |
| | WGOL | 1300 | |
| Gonzales, Tex. | KCTI | 1450 | |
| Goodland, Kans. | KLOE | 730 | M |
| Goose Bay, Nfld. | CFGB | 1340 | |
| Goshen, Ind. | WKAM | 1460 | |
| Grafton, N.D. | KGPC | 1340 | |
| Grafton, W.Va. | WVVW | 1260 | |
| Graham, Tex. | KSWA | 1330 | |
| Granby, Que. | CHEF | 1450 | |
| Grand Coulee, Wash. | KFDR | 1360 | |
| Grande Prairie, Alta. | CFGP | 1050 | |
| Grand Falls, Nfld. | CBT | 540 | |
| Grand Forks, N.D. | KFJM | 1370 | |
| | KILO | 1440 | C |
| | KNOX | 1310 | M |
| Grand Haven, Mich. | WGHN | 1370 | |
| Grand Island, Nebr. | KMMJ | 750 | A |
| | KRGI | 1430 | |
| Grand Junction, Colo. | KREX | 920 | C |
| | KEXO | 1230 | A |
| | KSTR | 620 | |
| | KWSL | 1340 | |
| Grand Prairie, Tex. | KRZY | 730 | |
| Grand Rapids, Mich. | WJEF | 1230 | C |
| | WFUR | 1570 | |
| | WGRD | 1410 | |
| | WLAV | 1340 | A |
| | WMAX | 1480 | M |
| | WOOD | 1300 | N |
| Grand Rapids, Minn. | KOZY | 1490 | M |
| Grangeville, Idaho | KORT | 1230 | |
| Granite City, Ill. | WGNU | 920 | |
| Grants, N.Mex. | KMIN | 980 | |
| Grants Pass, Oreg. | KAGI | 930 | M |
| | KAJO | 1270 | |
| Gravelbourg, Sask. | CFGR | 1230 | |
| | CFRG | 710 | |
| Grayson, Ky. | WGOH | 1370 | |
| Gt. Barrington, Mass. | WSBS | 860 | |
| Gt. Bend, Kans. | KVGB | 1590 | N |
| Gt. Falls, Mont. | KFBB | 1310 | C |
| | KUDI | 1450 | |
| | KMON | 560 | M |
| | KARR | 1400 | N |
| Greeley, Colo. | KFKA | 1310 | |
| | KYOU | 1450 | |
| Green Bay, Wis. | WBAY | 1360 | C |
| | WJPG | 1440 | M |
| | WDUZ | 1400 | A |
| Green Cove Springs, Fla. | WGRC | 1580 | |
| Greeneville, Tenn. | WGRV | 1340 | |
| | WSMG | 1450 | |
| Greenfield, Mass. | WHAI | 1240 | M |
| Greensboro, N.C. | WBIG | 1470 | C |
| | WCOG | 1320 | |
| | WGBG | 1400 | A |
| | WPET | 950 | |
| Greensburg, Pa. | WHJB | 620 | |
| Greenville, Ala. | WGYV | 1380 | |
| Greenville, Mich. | WPLB | 1380 | |
| Greenville, Miss. | WJPR | 1330 | |
| | WDDT | 900 | |
| | WGVM | 1260 | |
| Greenville, Pa. | WGRP | 940 | |
| Greenville, N.C. | WGTC | 1590 | M |
| | WOOW | 1340 | |
| Greenville, S.C. | WESC | 660 | |
| | WFBC | 1330 | N |
| | WMRB | 1490 | C-M |
| | WMUU | 1260 | |
| | WQOK | 1440 | C |
| Greenville, Tex. | KGVL | 1400 | |
| Greenwood, Miss. | WABG | 960 | A |
| | WGRM | 1240 | N |
| Greenwood, S.C. | WCRS | 1450 | N |
| | WGSW | 1350 | |
| Greer, S.C. | WEAB | 800 | |
| | WCKI | 1300 | A |
| Grenada, Miss. | WNAG | 1400 | M |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Gresham, Oreg. | KGRO | 1230 | |
| Gretna, Va. | WMNA | 730 | |
| Griffin, Ga. | WKEU | 1450 | M |
| | WHIE | 1320 | |
| | WRIX | 1410 | |
| Grinnell, Iowa | KGRN | 1410 | |
| Groton, Conn. | WSUB | 980 | |
| Grove City, Pa. | WSAJ | 1340 | |
| Grundy, Va. | WNRG | 1250 | |
| Guayama, P.R. | WXRF | 1590 | |
| Guelph, Ont. | CJOY | 1460 | |
| Gulfport, Miss. | WROA | 1390 | |
| | WGCM | 1240 | A |
| Gunnison, Colo. | KGUC | 1490 | |
| Guntersville, Ala. | WGSV | 1270 | |
| Guthrie, Okla. | KWRW | 1490 | |
| Guymon, Okla. | KGYN | 1220 | |
| Hagerstown, Md. | WARK | 1490 | C |
| | WJEJ | 1240 | A-M |
| Haines City, Fla. | WHAN | 930 | |
| Haleyville, Ala. | WJRB | 1230 | M |
| Halfway, Md. | WDDW | 1410 | |
| Halifax, N.S. | CBH | 790 | |
| | CHNS | 960 | |
| | CJCH | 920 | |
| Hamden, Conn. | WDEE | 1220 | |
| Hamilton, Ala. | WERH | 970 | |
| Hamilton, Mont. | KYLQ | 980 | |
| Hamilton, Ohio | WMOH | 1450 | |
| Hamilton, Ont. | CHIQ | 1280 | |
| | CHML | 900 | |
| | CKOC | 1150 | |
| Hamilton, Tex. | KCLW | 900 | |
| Hamlet, N.C. | WKDX | 1400 | |
| Hammond, Ind. | WJOB | 1230 | |
| Hammond, La. | WFPR | 1400 | |
| Hammonton, N.J. | WNJH | 1580 | |
| Hampton, S.C. | WBHC | 1270 | |
| Hampton, Va. | WVEC | 1490 | |
| Hancock, Mich. | WMPL | 920 | |
| Hanford, Calif. | KNGS | 620 | |
| Hannibal, Mo. | KHMO | 1070 | |
| Hanover, N.H. | WTSL | 1400 | |
| | WDCR | 1340 | |
| Hanover, Pa. | WHVR | 1280 | |
| Harlan, Ky. | WHLN | 1410 | |
| Harlingen, Tex. | KGBT | 1530 | |
| Harriman, Tenn. | WHBT | 1600 | |
| Harrisburg, Ill. | WEBQ | 1240 | |
| Harrisburg, Pa. | WHGB | 1400 | A |
| | WCMB | 1460 | M |
| | WHP | 580 | C |
| | WKBO | 1230 | N |
| Harrison, Ark. | KHOZ | 900 | |
| Harrisonburg, Va. | WHBG | 1360 | |
| | WSVA | 550 | N |
| Harrodsburg, Ky. | WHBN | 1420 | |
| Hartford, Conn. | WDRC | 1360 | C |
| | WCCC | 1290 | M |
| | WPOP | 1410 | M-A |
| | WTIC | 1080 | N |
| Hartford, Wis. | WTKM | 1540 | |
| Hartselle, Ala. | WHRT | 860 | |
| Hartsville, S.C. | WHSC | 1450 | M |
| Hartwell, Ga. | WKLY | 980 | |
| Harvard, Ill. | WMCW | 1600 | |
| Harvey, Ill. | WBEE | 1570 | |
| Hastings, Mich. | WBCH | 1220 | |
| Hastings, Nebr. | KHAS | 1230 | |
| Hattiesburg, Miss. | WBKH | 950 | |
| | WFOR | 1400 | N |
| | WHSY | 1230 | A |
| | WXXX | 1310 | |
| Haverhill, Mass. | WHAV | 1490 | |
| Havre, Mont. | KOJM | 610 | M |
| Havre de Grace, Md. | | | |
| | WASA | 1330 | |
| Hawkinsville, Ga. | WCEH | 610 | |
| Haynesville, La. | KLUV | 1580 | |
| Hays, Kans. | KAYS | 1400 | |
| Hayward, Wis. | WHSM | 910 | |
| Hazard, Ky. | WKIC | 1390 | M |
| Hazlehurst, Miss. | WMDC | 1220 | |
| Hazleton, Pa. | WAZL | 1490 | N-M |
| | WTHT | 1300 | |
| Helena, Ark. | KFFA | 1360 | M |
| Helena, Mont. | KCAP | 1340 | M |
| | KBLL | 1240 | N |
| Hemet, Calif. | KHSJ | 1320 | |
| Hempstead, N.Y. | WHLI | 1100 | |
| Henderson, Ky. | WSON | 860 | |
| Henderson, Nev. | KBMI | 1400 | |
| | KTOO | 1280 | |
| Henderson, N.C. | WHNC | 890 | M |
| | WHVH | 1450 | |
| Henderson, Tex. | KGRI | 1000 | |
| | KWRD | 1470 | |
| Hendersonville, N.C. | | | |
| | WHKP | 1450 | A |
| Henryetta, Okla. | KHEN | 1590 | |
| Hereford, Tex. | KPAN | 860 | |
| Herkimer, N.Y. | WALY | 1420 | |
| Hermiston, Oreg. | KOHU | 1570 | |
| Herrin, Ill. | WJPF | 1340 | M |
| Hettinger, N.Dak. | KNDC | 1490 | |
| Hibbing, Minn. | WMFG | 1240 | N |
| Hickory, N.C. | WHKY | 1290 | A |
| | WIRC | 630 | |
| Highland Park, Tex. | KVIL | 1150 | |
| Highland Springs, Va. | | | |
| | WENZ | 1450 | |
| High Point, N.C. | WMFR | 1230 | A |
| | WNOS | 1590 | |
| | WHPE | 1070 | |
| Hillsboro, Ohio | WSRW | 1590 | |
| Hillsboro, Oreg. | KUIK | 1360 | |
| Hillsboro, Tex. | KHBR | 1560 | |
| Hillsdale, Mich. | WCSR | 1340 | |
| Hillsville, Va. | WHHV | 1400 | |
| Hilo, Hawaii | KHBC | 970 | C |
| | KIPA | 1110 | |
| | KIMO | 850 | M |
| Hinesville, Ga. | KGML | 990 | |
| Hobart, Okla. | KTJS | 1420 | |
| Hobbs, N.Mex. | KWEW | 1480 | M |
| | KHOB | 1390 | |
| Holbrook, Ariz. | KDJI | 1270 | |
| Holdredge, Nebr. | KUVR | 1380 | |
| Holland, Mich. | WHTC | 1450 | |
| | WJBL | 1260 | |
| Hollister, Calif. | KGHT | 1520 | |
| Hollywood, Fla. | WGMA | 1320 | |
| Holyoke, Mass. | WREB | 930 | |
| Homer, La. | KHAL | 1320 | |
| Homestead, Fla. | WSDB | 1430 | |
| Homewood, Ala. | WJLD | 1400 | |
| Honolulu, Hawaii | KGMB | 590 | C |
| | KHAI | 1090 | |
| | KPOI | 1380 | |
| | KIKI | 830 | |
| | KGU | 760 | N |
| | KHVH | 1040 | |
| | KORL | 650 | M |
| | KNDI | 1270 | |
| | KOHO | 1170 | |
| | KTRG | 990 | |
| | KULA | 690 | A |
| Hood River, Oreg. | KIHR | 1340 | |
| Hope, Ark. | KXAR | 1490 | |
| Hopewell, Va. | WHAP | 1340 | |
| Hopkinsville, Ky. | WHOP | 1230 | C |
| | WKOA | 1480 | |
| Hoquiam, Wash. | KHOK | 1560 | |
| Hornell, N.Y. | WWHG | 1320 | |
| | WLEA | 1480 | M |
| Hot Springs, Ark. | KAAB | 1340 | A |
| | KBHS | 590 | |
| | KZNG | 1470 | M |
| Hot Springs, S. Dak. | KOBH | 580 | |
| Houghton, Mich. | WHDF | 1400 | |
| Houghton Lake, Mich. | | | |
| | WHGR | 1290 | |
| Houlton, Maine | WHOU | 1340 | |
| Houma, La. | KCIL | 1490 | N |
| Houston, Miss. | WCPC | 1320 | |
| Houston, Mo. | KHTN | 1250 | |
| Houston, Tex. | KCOH | 1430 | |
| | KILT | 610 | |
| | KNUZ | 1230 | |
| | KODA | 1010 | |
| | KPRC | 950 | N |
| | KTHT | 790 | |
| | KTRH | 740 | C |
| | KXYZ | 1320 | A |
| | KYOK | 1590 | |
| Howell, Mich. | WHMI | 1350 | |
| Hudson, N.Y. | WHUC | 1230 | |
| Hugo, Okla. | KIHN | 1340 | |
| Hull, Que. | CKCH | 970 | |
| Humacao, P.R. | WALO | 1240 | |
| Humboldt, Tenn. | WIRJ | 740 | |
| Huntingdon, Pa. | WHUN | 1150 | |
| Huntington, Ind. | WHLT | 1300 | |
| Huntington, N.Y. | WGSM | 740 | |
| Huntington, W.Va. | | | |
| | WKEE | 800 | M-A |
| | WSAZ | 930 | N |
| | WWHY | 1470 | M |
| Huntsville, Ala. | WBHP | 1230 | M |
| | WEUP | 1600 | |
| | WFIX | 1450 | |
| | WAAY | 1550 | A |
| Huntsville, Ont. | CKAR | 630 | |
| Huntsville, Tex. | KSAM | 1490 | |
| Huron, S.Dak. | KIJV | 1340 | |
| Hutchinson, Kans. | KWBW | 1450 | N |
| | KWHK | 1260 | |
| Hutchinson, Minn. | KDUZ | 1260 | |
| Idabel, Okla. | KBEL | 1240 | |
| Idaho Falls, Idaho | KID | 590 | C |
| | KIFI | 1260 | A-M |
| | KTEE | 900 | |
| Independence, Ia. | KUPI | 980 | |
| | KOUR | 1220 | |
| Independence, Kans. | | | |
| | KIND | 1010 | M |
| Independence, Mo. | KANS | 1510 | |
| Indiana, Pa. | WDAD | 1450 | C |
| Indianapolis, Ind. | | | |
| | WFBM | 1260 | A |
| | WGEE | 1590 | |
| | WIBC | 1070 | |
| | WIRE | 1430 | N |
| | WISH | 1310 | C |
| | WXLW | 950 | M |
| Indianola, Miss. | WDLT | 1380 | |
| Indio, Calif. | KREO | 1400 | A |
| Inglewood, Calif. | KTYM | 1460 | |
| Inkster, Mich. | WCHB | 1440 | |
| International Falls, Minn. | | | |
| | KGHS | 1230 | |
| Invrik, N.W.T. | CHAK | 860 | |
| Iola, Kansas | KALN | 1370 | |
| Ionia, Mich. | WION | 1430 | |
| Iowa City, Iowa | KXIC | 800 | |
| | WSUI | 910 | |
| Iron Mtn., Mich. | WMIQ | 1450 | A |
| Iron River, Mich. | WIKB | 1230 | M |
| Irondale, Ala. | WIXI | 1480 | |
| Ironton, Ohio | WIRO | 1230 | M |
| Ironwood, Mich. | WJMS | 630 | M |
| Irvine, Ky. | WIRV | 1550 | |
| Isabella, P.R. | WISA | 1390 | |
| Ishpeming, Mich. | WJPD | 1240 | |
| | WJAN | 970 | |
| Islip, N.Y. | WBIC | 540 | |
| Ithaca, N.Y. | WHCU | 870 | C |
| | WTKO | 1470 | A |
| Iuka, Miss. | WVOM | 1270 | |
| Jackson, Ala. | WTHG | 1290 | M |
| Jackson, Mich. | WIBM | 1450 | A |
| | WKHM | 970 | M |
| Jackson, Miss. | WJDX | 620 | N |
| | WJQS | 1400 | M |
| | WJXN | 1450 | |
| | WOKJ | 1590 | |
| | WRBC | 1300 | M |
| | WSLI | 930 | |
| Jackson, Ohio | WLMJ | 1280 | |
| Jackson, Tenn. | WDXI | 1310 | |
| | WJAK | 1460 | |
| | WTJS | 1390 | A |
| Jacksonville, Fla. | WJAX | 930 | N |
| | WAPE | 690 | |
| | WZOK | 1320 | A-M |
| | WIVY | 1050 | |
| | WMBR | 1460 | C |
| | WOBS | 1360 | |
| | WPDQ | 600 | |
| | WQIK | 1280 | |
| | WRHC | 1400 | |
| Jacksonville, Ill. | WJIL | 1550 | |
| | WLDS | 1180 | |
| Jacksonville, N.C. | WJNC | 1240 | M |
| | WLAS | 910 | |
| Jacksonville, Tex. | KEBE | 1400 | |
| Jacksonville Bch., Fla. | | | |
| | WZRO | 1010 | |
| Jamestown, N.Dak. | KEYJ | 1400 | M |
| | KSJB | 600 | C |
| Jamestown, N.Y. | WJTN | 1240 | A |
| | WXYJ | 1340 | M |
| Jamestown, Tenn. | WCLC | 1260 | |
| Janesville, Wis. | WCLO | 1230 | M |
| Jasper, Ala. | WWWB | 1360 | |
| | WARF | 1240 | |
| Jasper, Ind. | WITZ | 990 | |
| Jasper, Tex. | KTXJ | 1350 | |
| Jefferson City, Mo. | KLIK | 950 | |
| | KWOS | 1240 | M |
| Jefferson City, Tenn. | | | |
| | WJFC | 1480 | |
| Jeffersonville, Ind. | WXVW | 250 | |
| Jennings, La. | KJEF | 1290 | |
| Jerome, Idaho | KART | 1400 | |
| Jerseyville, Ill. | WJBM | 1480 | |
| Jesup, Ga. | WBGR | 1370 | |
| Johnson City, Tenn. | | | |
| | WJCW | 910 | C |
| | WETB | 790 | M |
| Johnston, S.C. | WJES | 250 | |
| Johnstown, N.Y. | WIZR | 930 | |
| Johnstown, Pa. | WJAC | 850 | |
| | WARD | 1490 | C |
| | WCRO | 1230 | M |
| Joliet, Ill. | WJOL | 1340 | |
| Joliette, Que. | CJLM | 1350 | |
| Jonesboro, Ark. | KBTM | 1230 | M |
| | KNEA | 970 | |
| Jonesboro, La. | KTOC | 920 | |
| Jonesboro, Tenn. | WJSO | 1590 | |
| Jonesville, La. | KANV | 1480 | |
| Jonquiere, Que. | CKRS | 590 | |
| Joplin, Mo. | WMBH | 1450 | M |
| | KQYX | 1560 | |
| | KFSB | 1310 | |
| | KODE | 1230 | C |
| Junction, Tex. | KMBL | 1450 | |
| Junc. City, Kans. | KJCK | 1420 | |
| Juneau, Alaska | KINY | 800 | C-A |
| | KJNO | 630 | A-M-N |
| Kailua, Hawaii | KLEI | 1130 | |
| Kaimuki, Hawaii | KAIM | 870 | |
| Kalamazoo, Mich. | WKPR | 1420 | |
| | WKZO | 590 | C |
| | WKLZ | 1470 | M |
| | WKMI | 1360 | |
| Kalispell, Mont. | KGEZ | 600 | M |
| | KOFI | 930 | |
| Kamloops, B.C. | CFJC | 910 | |
| Kane, Pa. | WADP | 960 | |
| Kankakee, Ill. | WKAN | 1320 | |
| Kannapolis, N.C. | WGTL | 870 | |
| | WRKB | 1460 | |
| Kans. City, Kans. | KCKN | 1340 | |
| Kansas City, Mo. | KCMO | 810 | C |
| | KMBC | 980 | A |
| | KPRS | 1590 | |
| | KUDL | 1380 | |
| | WDAF | 610 | N |
| | WHB | 710 | |
| Kearney, Nebr. | KGFW | 1340 | M |
| | KRNY | 1460 | |
| Keene, N.H. | WKNE | 1290 | N |
| | WKBK | 1220 | |
| Kelowna, B.C. | CKOV | 630 | |
| Kelso, Wash. | KLOG | 1490 | |
| Kendallville, Ind. | WAWK | 1570 | |
| Kenedy, Tex. | KAML | 990 | |
| Kennett, Mo. | KBOA | 830 | |
| Kennewick-Pasco-Richland, | | | |
| Wash. | KEPR | 610 | C |
| Kenora, Ont. | CJRL | 1220 | |
| Kenosha, Wis. | WLIP | 1050 | |
| Kentville, N.S. | CKEN | 1350 | |
| Keokuk, Iowa | KOKX | 1310 | |
| Kermit, Tex. | KERB | 600 | |
| Kerrville, Tex. | KERV | 1230 | |
| Kershaw, S.C. | WKSC | 1300 | |
| Ketchikan, Alaska | KTKN | 930 | C-A |
| Kewanee, Ill. | WKEI | 1450 | |
| Keyser, W.Va. | WKYR | 1270 | M |
| Key West, Fla. | WKWF | 1600 | A-M |
| | WKIZ | 1500 | |
| Kilgore, Tex. | KOCA | 1240 | |
| Killeen, Tex. | KLEN | 1050 | M |
| Kimball, Nebr. | KIMB | 1260 | |
| King City, Calif. | KRKC | 1570 | |
| Kingman, Ariz. | KAAA | 1230 | A |
| Kings Mountain, N.C. | | | |
| | WKMT | 1220 | |
| Kingsport, Tenn. | WKIN | 1320 | |
| | WKPT | 1550 | N |
| Kingston, N.Y. | WBAZ | 1550 | M |
| | WGHQ | 920 | |
| | WKNY | 1490 | C |
| Kingston, Ont. | CFRC | 1490 | |
| | CKLC | 1380 | |
| | CKWS | 960 | |
| Kingstree, S.C. | WDKD | 1310 | |
| Kingsville, Tex. | KINE | 1330 | |
| Kinston, N.C. | WELS | 1010 | |
| | WFTC | 960 | A |
| | WISP | 1230 | M |
| Kirkland, Wash. | KCDI | 1460 | |
| | KNBX | 1050 | |
| Kirkland Lake, Ont. | CJKL | 560 | |
| Kirksville, Mo. | KIRX | 1450 | A |
| Kissimmee, Fla. | WKBX | 1220 | |
| Kitchener, Ont. | CKCR | 1490 | |
| | CKKW | 1320 | |
| Kittanning, Pa. | WACB | 1380 | |
| Klamath Falls, Oreg. | | | |
| | KAGO | 1150 | M |
| | KFLW | 1450 | A-C |
| | KLAD | 960 | |
| Knoxville, Iowa | KNIA | 1320 | |
| Knoxville, Tenn. | WBIR | 1240 | A |
| | WIVK | 860 | |
| | WATE | 620 | N |
| | WKGN | 1340 | M |
| | WKXV | 900 | M |
| | WNOX | 990 | C |
| Kodiak, Alaska | WCVQ | 960 | |
| Kokomo, Ind. | WIOU | 1350 | C |
| Kosciusko, Miss. | WKOZ | 1350 | A |
| Laconia, N.H. | WLNH | 1350 | |
| | WEMJ | 1490 | |
| LaCrosse, Wis. | WKBH | 1410 | N |
| | WLCX | 1490 | |
| | WKTY | 580 | A |
| Ladysmith, Wis. | WLDY | 1340 | |
| Lafayette, Ga. | WLFA | 1590 | |
| Lafayette, Ind. | WASK | 1450 | M |
| | WAZY | 1410 | |
| | WBAA | 920 | |
| Lafayette, La. | KPEL | 1420 | A |
| | KVOL | 1330 | N |
| | KXKW | 1520 | |
| Lafayette, Tenn. | WEEN | 1460 | |
| LaFollette, Tenn. | WLAF | 1450 | |
| LaGrande, Oreg. | KLBM | 1450 | |
| LaGrange, Ga. | WLAG | 1240 | M |
| | WTRP | 620 | |
| LaGrange, Ill. | WTAQ | 1300 | |
| LaGrange, Tex. | KVLG | 1570 | |
| LaJunta, Colo. | KBZZ | 1400 | M |
| Lake Charles, La. | KLOU | 1580 | |
| | KPLC | 1470 | N |
| | KAOK | 1400 | M |
| Lake City, Fla. | WDSR | 1340 | |
| | WGRO | 960 | |
| Lake City, S.C. | WJOT | 1260 | |
| Lakeland, Fla. | WLAK | 1430 | N |
| | WONN | 1230 | M |
| | WYSE | 1330 | |
| Lake Placid, N.Y. | WIRD | 920 | |
| Lake Providence, La. | KLPL | 1050 | |
| Lake Tahoe, Calif. | KOWL | 1490 | |
| Lakeview, Oreg. | KQIK | 1230 | |
| Lake Wales, Fla. | WIPC | 1280 | |
| Lakewood, Colo. | KLAK | 1600 | |
| Lakewood, Wash. | KFHA | 1480 | |
| Lake Worth, Fla. | WLIZ | 1380 | |
| Lamar, Colo. | KLMR | 920 | M |
| Lamesa, Tex. | KPET | 690 | |
| Lampasas, Tex. | KCYL | 1450 | |
| Lancaster, Calif. | KAVL | 610 | |
| | KBVM | 1380 | |
| Lancaster, Ohio | WHOK | 1320 | |
| Lancaster, Pa. | WGAL | 1490 | N |
| | WLAN | 1390 | A-M |
| Lancaster, S.C. | WLCM | 1360 | |
| Lander, Wyo. | KOVE | 1330 | M |
| Lanett, Ala. | WRLD | 1490 | A |
| Lansdale, Pa. | WNPV | 1440 | |
| Lansford, Pa. | WLSH | 1410 | |
| Lansing, Mich. | WILS | 1320 | |
| | WJIM | 1240 | A-N |
| | WMRT | 1010 | |
| Lapeer, Mich. | WMPC | 1230 | |
| LaPorte, Ind. | WLOI | 1540 | |
| Laramie, Wyo. | KLME | 1490 | |
| | KOWB | 1290 | M |
| Laredo, Tex. | KGNS | 1300 | |
| | KVOZ | 1490 | M |
| LaSalle, Ill. | WLPO | 1220 | |
| LaSarre, Que. | CKLS | 1240 | |
| LasCruces, N.Mex. | KOBE | 1450 | |
| | KGRT | 570 | |
| Las Vegas, Nev. | KENO | 1460 | A |
| | KLAS | 1230 | C |
| | KORK | 1340 | M |
| | KRAM | 920 | |
| | KLUC | 1050 | |
| | KVEG | 970 | |
| Las Vegas, N.Mex. | KFUN | 1230 | A |
| Latrobe, Pa. | WSHH | 1570 | M |
| | WTRA | 1480 | |
| LaTuque, Que. | CFLM | 1240 | |
| Laurel, Miss. | WAML | 1340 | N |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | WLAU | 1600 | A |
| | WNSL | 1260 | |
| Laurens, S.C. | WLBG | 860 | |
| Laurinburg, N.C. | WEWO | 1080 | |
| | WLCW | 1300 | |
| Lawrence, Kans. | KFKU | 1250 | |
| | KLWN | 1320 | |
| Lawrence, Mass. | WCCM | 800 | M |
| Lawrenceburg, Tenn. | WDXE | 1370 | |
| Lawrenceville, Ga. | WLAW | 1360 | |
| Lawrenceville, Ill. | WAKO | 910 | |
| Lawrenceville, Va. | WLES | 580 | |
| Lawton, Okla. | KSWO | 1380 | A |
| | KCCO | 1050 | |
| Leadville, Colo. | KBRR | 1230 | |
| Leaksville, N.C. | WLOE | 1490 | M |
| Leamington, Ont. | CJSP | 710 | |
| Leavenworth, Kans. | KCLO | 1410 | |
| Lebanon, Ky. | WLBN | 1590 | |
| Lebanon, Mo. | KLWT | 1230 | |
| Lebanon, Oreg. | KGAL | 920 | |
| Lebanon, Pa. | WLBR | 1270 | |
| Lebanon, Tenn. | WCOR | 900 | |
| Leesburg, Fla. | WLBE | 790 | M |
| | WBIL | 1410 | |
| Leesburg, Va. | WAGE | 1290 | |
| Leesville, La. | KLLA | 1570 | |
| Lehighton, Pa. | WYNS | 1150 | |
| Leitchfield, Ky. | WMTL | 1580 | |
| Leland, Miss. | WESY | 1580 | |
| LeMars, Iowa | KLEM | 1410 | |
| Lemoore, Calif. | KLAN | 1320 | |
| Lenoir, N.C. | WJRI | 1340 | M |
| Lenoir, Tenn. | WLIL | 730 | |
| Leonardtown, Md. | WKIK | 1370 | |
| Lethbridge, Alta. | CJOC | 1220 | |
| | CHEC | 1090 | |
| Levelland, Tex. | KLVT | 1230 | |
| Levittown, Pa. | WBCB | 1490 | |
| Lewisburg, Pa. | WITT | 1010 | |
| Lewisburg, Tenn. | WJJM | 1490 | M |
| Lewiston, Idaho | KRLC | 1350 | M |
| | KOZE | 1300 | |
| Lewiston, Maine | WCOU | 1240 | M |
| | WLAM | 1470 | A |
| Lewistown, Mont. | KXLO | 1230 | M |
| Lewistown, Pa. | WKVA | 920 | A |
| | WMRF | 1490 | N |
| Lexington, Ky. | WLAP | 630 | M |
| | WBLG | 1300 | A |
| | WVLK | 590 | C |
| Lexington, Miss. | WXTN | 1150 | |
| Lexington, Mo. | KLEX | 1570 | |
| Lexington, Nebr. | KRVN | 1010 | |
| Lexington, N.C. | WBUY | 1440 | |
| Lexington, Tenn. | WDXL | 1490 | |
| Lexington, Va. | WREL | 1450 | N |
| Lexington Pk., Md. | WPTX | 920 | |
| Libby, Mont. | KLCB | 1230 | M |
| | KLIB | 1470 | |
| Liberal, Kans. | KSCB | 1270 | |
| Liberty, N.Y. | WVOS | 1240 | |
| Liberty, Tex. | KWLD | 1050 | |
| Lihue, Hawaii | KTOH | 1490 | |
| Lima, Ohio | WIMA | 1150 | A |
| Lincoln, Ill. | WPRC | 1370 | |
| Lincoln, Nebr. | KFOR | 1240 | A |
| | KLIN | 1400 | |
| | KLMS | 1480 | |
| Lincolnton, N.C. | WLON | 1050 | |
| Lindsay, Ont. | CKLY | 910 | |
| Linton, Ind. | WBTO | 1600 | |
| Litchfield, Ill. | WSMI | 1540 | |
| Litchfield, Minn. | KLFD | 1410 | |
| Little Falls, Minn. | KLTF | 960 | |
| Little Falls, N.Y. | WLFH | 1230 | |
| Littlefield, Tex. | KZZN | 1490 | |
| Little Rock, Ark. | KARK | 920 | N |
| | KAJI | 1250 | M |
| | KLRA | 1010 | A |
| | KOKY | 1440 | |
| | KTHS | 1090 | C-M |
| | KVLC | 1050 | |
| Littleton, Colo. | KMOR | 1510 | |
| Live Oak, Fla. | WNER | 1250 | |
| Livingston, Mont. | KPRK | 1340 | M |
| Livingston, Tenn. | WLIV | 920 | |
| Livingston, Tex. | KETX | 1440 | |
| | KVLL | 1220 | |
| Lloydminster, Alta. | CKSA | 1150 | |
| Lock Haven, Pa. | WBPZ | 1230 | M |
| Lockport, N.Y. | WUSJ | 1340 | |
| Lodi, Calif. | KCVR | 1570 | |
| Logan, Utah | KVNU | 610 | M |
| | KSTU | 1300 | |
| | KLGN | 1390 | |
| Logan, W.Va. | WLOG | 1230 | M |
| | WVOW | 1290 | |
| Logansport, Ind. | WSAL | 1230 | M |
| Lompoc, Calif. | KKOK | 1410 | |
| | KNEZ | 960 | |
| London, Ky. | WFTG | 1400 | |
| London, Ont. | CFPL | 980 | |
| | CKSL | 1290 | |
| Long Beach, Calif. | KFOX | 1280 | |
| | KGER | 1390 | |
| Longmont, Colo. | KLMO | 1050 | |
| Long Prairie, Minn. | KEYL | 1400 | |
| Longview, Tex. | KFRO | 1370 | A |
| | KLUE | 1280 | |
| Longview, Wash. | KEDO | 1400 | A |
| | KBAM | 1270 | |
| Lookout Mtn., Tenn. | WFLI | 1070 | |
| Lorain, Ohio | WWIZ | 1380 | A |
| Lordsburg, N.Mex. | KLHS | 950 | |
| Loris, S.C. | WLSC | 1570 | |
| Los Alamos, N.Mex. | KRSN | 1490 | A |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Los Angeles, Calif. | KABC | 790 | A |
| | KFI | 640 | N |
| | KHJ | 930 | M |
| | KFSG | 1150 | |
| | KFWB | 980 | |
| | KGFJ | 1230 | |
| | KFAC | 1330 | |
| | KLAC | 570 | |
| | KMPC | 710 | |
| | KNX | 1070 | C |
| | KPOL | 1540 | |
| | KGBS | 1020 | |
| | XETRA | 690 | |
| | KRKD | 1150 | |
| Los Banos, Calif. | KLBS | 1330 | |
| Louisburg, N.C. | WYRN | 1480 | |
| Louisville, Ga. | WPEH | 1420 | |
| Louisville, Ky. | WAVE | 970 | N |
| | WAKY | 790 | M |
| | WHAS | 840 | C |
| | WKLO | 1080 | A |
| | WINN | 1240 | |
| | WKYW | 900 | C |
| | WLOU | 1350 | |
| | WTMT | 620 | A-M |
| Louisville, Miss. | WLSM | 1270 | |
| Loveland, Colo. | KLOV | 1570 | |
| Lovington, N.Mex. | KLEA | 630 | |
| Lowell, Mass. | WCAP | 980 | |
| | WLLH | 1400 | |
| Lubbock, Tex. | KCBD | 1590 | M-N |
| | KDAV | 580 | |
| | KDUB | 1340 | |
| | KFYO | 790 | C |
| | KLLL | 1460 | M |
| | KSEL | 950 | A |
| Lucedale, Miss. | WHHT | 1440 | |
| Ludington, Mich. | WKLA | 1450 | A |
| Lufkin, Tex. | KRBA | 1340 | A |
| | KTRE | 1420 | M |
| Lumberton, N.C. | WAGR | 580 | |
| | WTSB | 1340 | M |
| Luray, Va. | WRLA | 1590 | |
| | WRAA | 1330 | |
| Lynchburg, Va. | WLVA | 590 | A |
| | WDMS | 1320 | |
| | WWOD | 1390 | M |
| | WBRG | 1050 | |
| Lynn, Mass. | WLYN | 1360 | |
| Lyons, Ga. | WBBT | 1340 | |
| Macomb, Ill. | WKAI | 1510 | |
| Macon, Ga. | WBML | 1240 | |
| | WCRY | 900 | |
| | WIBB | 1280 | |
| | WMAZ | 940 | C |
| | WNEX | 1400 | A-M |
| Macon, Miss. | WMBC | 1400 | |
| Madera, Calif. | KHOT | 1250 | |
| Madill, Okla. | KMAD | 1550 | |
| Madison, Fla. | WMAF | 1230 | |
| Madison, Ga. | WYTH | 1250 | |
| Madison, Ind. | WORX | 1270 | |
| Madison, S.D. | KJAM | 1390 | |
| Madison, Tenn. | WENO | 1430 | |
| Madison, Wis. | WHA | 970 | |
| | WIBA | 1310 | N |
| | WISM | 1480 | A-M |
| | WKOW | 1070 | C |
| Madisonville, Ky. | WFMW | 730 | |
| | WTTL | 1310 | |
| Magee, Miss. | WSJC | 790 | |
| Magnolia, Ark. | KVMA | 630 | M |
| Malden, Mo. | KTCB | 1470 | |
| Malone, N.Y. | WICY | 1490 | M |
| Malvern, Ark. | KBOK | 1310 | |
| Manassas, Va. | WPRW | 1460 | |
| Manati, P.R. | WMNT | 1500 | |
| Manchester, Conn. | WINF | 1230 | C |
| Manchester, Ga. | WFDR | 1370 | |
| Manchester, Ky. | WWXL | 1450 | |
| Manchester, N.H. | WFEA | 1370 | M |
| | WGIR | 610 | C |
| | WKBR | 1250 | |
| Manchester, Tenn. | WMSR | 1320 | |
| Manhattan, Kans. | KSAC | 580 | |
| | KMAN | 1350 | |
| Manistee, Mich. | WMTE | 1340 | |
| Manitou Springs, Colo. | KCMS | 1490 | |
| Manitowoc, Wis. | WCUB | 980 | |
| | WOMT | 1240 | M |
| Mankato, Minn. | KYSM | 1230 | N |
| | KTOE | 1420 | A |
| Manning, S.C. | WYMB | 1410 | |
| Mansfield, La. | KDBC | 1360 | |
| Mansfield, Ohio | WMAN | 1400 | A |
| | WCLW | 1570 | |
| Maquoketa, Iowa | KMAQ | 1320 | |
| Marathon, Fla. | WEFG | 1300 | |
| Marianna, Ark. | KZOT | 1460 | |
| Marianna, Fla. | WTYS | 1340 | M |
| | WTOT | 980 | |
| Marietta, Ga. | WFOM | 1230 | |
| | WBIE | 1050 | |
| Marietta, Ohio | WMOA | 1490 | A |
| Marine City, Mich. | WDOG | 1590 | |
| Marinette, Wis. | WMAM | 570 | N |
| Marion, Ala. | WJAM | 1310 | |
| Marion, Ill. | WGGH | 1150 | |
| Marion, Ind. | WBAT | 1400 | A |
| | WMRI | 860 | |
| Marion, N.C. | WBRM | 1250 | |
| Marion, Ohio | WMRN | 1490 | A |
| Marion, S.C. | WATP | 1430 | |
| Marion, Va. | WMEV | 1010 | A |
| Marked Tree, Ark. | KPCA | 1580 | |
| Marksville, La. | KAPB | 1370 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Marlborough, Mass. | WSRO | 1470 | |
| Marlin, Tex. | KAWA | 1010 | |
| Marquette, Mich. | WDMJ | 1320 | M |
| Marshall, Minn. | KMHL | 1400 | A |
| Marshall, Mo. | KMMO | 1300 | |
| Marshall, N.C. | WMMH | 1460 | |
| Marshall, Tex. | KMHT | 1450 | |
| | KADO | 1410 | |
| Marshalltown, Iowa | KFJB | 1230 | |
| Marshfield, Wis. | WDLB | 1450 | |
| Martin, Tenn. | WCMT | 1410 | |
| Martinsburg, W.Va. | WEPM | 1340 | |
| Martinsville, Va. | WHEE | 1370 | |
| | WMVA | 1450 | N |
| Marysville, Calif. | KMYC | 1410 | M |
| Marysville, Kans. | KNDY | 1570 | |
| Maryville, Mo. | KNIM | 1580 | |
| Maryville, Tenn. | WGAP | 1400 | |
| Mason City, Iowa | KGLO | 1300 | C |
| | KRIB | 1490 | |
| | KSMN | 1010 | |
| Massena, N.Y. | WMSA | 1340 | A |
| | WSTS | 1050 | |
| Massillon, Ohio | WTIG | 990 | |
| Matane, Que. | CKBL | 1250 | |
| Matawan, W.Va. | WHJC | 1360 | |
| Mattoon, Ill. | WLBH | 1170 | |
| Mauston, Wis. | WRJC | 1270 | |
| Mayaguez, P.R. | WAEL | 600 | |
| | WKJB | 710 | |
| | WORA | 1150 | |
| | WPRA | 990 | |
| | WTIL | 1300 | |
| Mayfield, Ky. | WNGO | 1320 | |
| Mayodan, N.C. | WMYN | 1420 | |
| Maysville, Ky. | WFTM | 1240 | M |
| McAlester, Okla. | KTMC | 1400 | |
| | KNED | 1150 | |
| McAllen, Tex. | KRIO | 910 | M |
| McCamey, Tex. | KAMY | 1450 | |
| McComb, Miss. | WHNY | 1250 | A |
| | WAPF | 980 | |
| McCook, Nebr. | KBRL | 1300 | M |
| | KWRV | 1360 | |
| McGehee, Ark. | KVSA | 1220 | |
| McKeesport, Pa. | WEDO | 810 | C |
| | WPQR | 1360 | M |
| McKenzie, Tenn. | WHDM | 1440 | |
| McKinney, Tex. | KMAE | 1600 | |
| McMinnville, Oreg. | KMCM | 1260 | |
| McMinnville, Tenn. | WBMC | 960 | |
| | WAKI | 1230 | M |
| McPherson, Kans. | KNEX | 1540 | |
| McRae, Ga. | WDAX | 1410 | |
| Meadville, Pa. | WMGW | 1490 | |
| Medford, Mass. | WHIL | 1430 | |
| Medford, Oreg. | KMED | 1440 | A |
| | KMFR | 860 | |
| | KDOV | 1300 | |
| | KBOY | 730 | |
| | KYJC | 1230 | A-C |
| Medford, Wis. | WIGM | 1490 | M |
| Medicine Hat, Alta. | CHAT | 1270 | |
| Media, Pa. | WXUR | 690 | |
| Melbourne, Fla. | WMMB | 1240 | M |
| Memphis, Tenn. | WHBQ | 560 | M |
| | WHER | 1430 | |
| | WMC | 790 | N |
| | WDIA | 1070 | |
| | WMPS | 680 | |
| | WHHM | 1340 | A |
| | WLOK | 1480 | |
| | WREC | 600 | C |
| | KWAM | 990 | |
| Mena, Ark. | KENA | 1450 | |
| Menominee, Mich. | WAGN | 1340 | A |
| Menomonie, Wis. | WMNE | 1360 | |
| Merced, Calif. | KYOS | 1480 | M |
| | KWIP | 1580 | |
| Meriden, Conn. | WMMW | 1470 | |
| Meridian, Miss. | WCOC | 910 | C |
| | WDAL | 1330 | M |
| | WMOX | 1010 | |
| | WOKK | 1450 | A |
| | WQIC | 1390 | |
| Merrill, Wis. | WXMT | 730 | |
| Mesa, Ariz. | KBUZ | 1310 | |
| Metropolis, Ill. | WMOK | 920 | |
| Metter, Ga. | WMAC | 1360 | |
| Mexia, Tex. | KBUS | 1590 | |
| Mexico, Mo. | KXEO | 1340 | M |
| Mexico, Pa. | WJUN | 1220 | |
| Miami, Ariz. | KIKO | 1340 | |
| Miami, Fla. | WGBS | 710 | C |
| | WCKR | 610 | N |
| | WFAB | 990 | |
| | WMBM | 1220 | |
| | WAME | 1260 | A |
| | WMIE | 1140 | |
| | WQAM | 560 | |
| | WSKP | 1450 | |
| | WINZ | 940 | M |
| Miami, Okla. | KGLC | 910 | |
| Miami Beach, Fla. | WMBM | 1490 | |
| | WKAT | 1360 | C |
| | WFUN | 790 | |
| Michigan City, Ind. | WIMS | 1420 | |
| Middleport-Pomroy, Ohio | WMPO | 1390 | |
| Middlesboro, Ky. | WMIK | 560 | |
| Middletown, Conn. | WCNX | 1150 | |
| Middletown, N.Y. | WALL | 1340 | |
| Middletown, Ohio | WPFB | 910 | |
| Midland, Mich. | WMDN | 1490 | |
| Midland, Ont. | CKMP | 1230 | |
| Midland, Tex. | KCRS | 550 | A |
| | KJBC | 1150 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | KWEL | 1600 | |
| Milan, Tenn. | WKBJ | 1600 | |
| Miles City, Mont. | KATL | 1340 | M |
| Milford, Del. | WKSB | 930 | |
| Milford, Mass. | WMRC | 1490 | |
| Milledgeville, Ga. | WMVG | 1450 | M |
| Millen, Ga. | WGSR | 1570 | |
| Millington, Tenn. | WHEY | 1220 | |
| | WGMM | 1380 | |
| Millville, N.J. | WMVB | 1440 | |
| Milton, Fla. | WEBY | 1330 | M |
| | WSRA | 1490 | |
| Milton, Pa. | WMLP | 1570 | |
| | WARC | 1380 | |
| Milwaukee, Wis. | WEMP | 1250 | |
| | WFOX | 860 | M |
| | WRIT | 1340 | |
| | WISN | 1150 | A |
| | WMIL | 1290 | |
| | WOKY | 920 | |
| | WTMJ | 620 | N |
| Minden, La. | KASO | 1240 | |
| Mineral Wells, Tex. | KORC | 1140 | |
| Mineola, N.Y. | WFYI | 1520 | |
| Minneapolis, Minn. | WCCO | 830 | C |
| | WLOL | 1330 | |
| | WMIN | 1400 | |
| | WDGY | 1130 | |
| | WPBC | 980 | |
| | WTCN | 1280 | A |
| | KTCR | 690 | |
| | KTIS | 900 | |
| | KUOM | 770 | |
| Minot, N.Dak. | KLPM | 1390 | M |
| | KQDY | 1320 | |
| | KCJB | 910 | C |
| Mission, Kans. | KBEA | 1480 | |
| Mission, Tex. | KIRT | 1580 | |
| Missoula, Mont. | KGVO | 1290 | C |
| | KXLL | 1450 | N |
| | KQTE | 1340 | M |
| | KYSS | 910 | |
| Mitchell, S.Dak. | KORN | 1490 | M |
| Moab, Utah | KURA | 1450 | |
| Moberly, Mo. | KNCM | 1230 | |
| Mobile, Ala. | WALA | 1410 | N |
| | WMOE | 1550 | |
| | WABB | 1480 | A |
| | WGOK | 900 | |
| | WTUF | 840 | |
| | WKRG | 710 | C |
| | WLIQ | 1360 | |
| | WMOZ | 960 | |
| Mobridge, S.Dak. | KOLY | 1300 | |
| Modesto, Calif. | KTRB | 860 | |
| | KBEE | 970 | A |
| | KFIV | 1360 | A |
| Mojave, Calif. | KDOL | 1340 | |
| Moline, Ill. | WQUA | 1230 | A |
| Monahans, Tex. | KVKM | 1330 | M |
| Moncton, N. B. | CBAF | 1330 | |
| | CKCW | 1220 | |
| Monett, Mo. | KRMO | 990 | |
| Monmouth, Ill. | WRAM | 1330 | |
| Monroe, Ga. | WMRE | 1490 | |
| Monroe, La. | KMLB | 1440 | A-N |
| | KLIC | 1230 | M |
| | KNOE | 1390 | |
| Monroe, Mich. | WQTE | 560 | |
| Monroe, N.C. | WMAP | 1060 | |
| Monroe, Wis. | WEKZ | 1260 | |
| Monroeville, Ala. | WMFC | 1360 | |
| Monterey, Calif. | KIDD | 630 | |
| | KMBY | 1240 | C |
| Montevideo, Minn. | KDMA | 1460 | A |
| Monte Vista, Colo. | KSLV | 1240 | |
| Montezuma, Ga. | WMNZ | 1050 | |
| Montgomery, Ala. | WBAM | 740 | |
| | WCOV | 1170 | C |
| | WAPX | 1600 | N |
| | WHHY | 1440 | N |
| | WMGY | 800 | M |
| | WRMA | 950 | |
| Montgomery, W.Va. | WMON | 1340 | M |
| Monticello, Ark. | KHBM | 1430 | |
| Monticello, Ky. | WFLW | 1360 | |
| Montmagny, Que. | CKBM | 1490 | |
| Montpelier-Barre, Vt. | WSKI | 1240 | A |
| Montreal, Que. | CBF | 690 | |
| | CBM | 940 | N |
| | CFCF | 600 | A |
| | CHLP | 1410 | |
| | CJAD | 800 | |
| | CJMS | 1280 | |
| | CKAC | 730 | C |
| | CKGM | 980 | |
| Montrose, Colo. | KUBC | 580 | |
| Montrose, Pa. | WPEL | 1250 | |
| Mooresville, N.C. | WHIP | 1350 | |
| Moorhead, Minn. | KVOX | 1280 | M |
| Moosejaw, Sask. | CHAB | 800 | |
| Morehead, Ky. | WMOR | 1330 | |
| Morehead City, N.C. | WMBL | 740 | |
| Morgan City, La. | KMRC | 1430 | M |
| Morganfield, Ky. | WMSK | 1550 | |
| Morganton, N.C. | WMNC | 1430 | |
| Morgantown, W.Va. | WAJR | 1440 | N |
| | WCLG | 1300 | |
| Morrilton, Ark. | KVOM | 800 | |
| Morris, Minn. | KMRS | 1230 | |
| Morristown, N.J. | WMTR | 1250 | |
| Morristown, Tenn. | WCRK | 1150 | M |
| | WMTN | 1300 | |
| Morton, Tex. | KRAN | 1280 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Moscow, Idaho | KRPL | 1400 | |
| Moses Lake, Wash. | KSEM | 1470 | |
| | KWIQ | 1260 | |
| Moultrie, Ga. | WMGA | 1400 | A |
| | WMTM | 1300 | |
| Moundsville, W.Va. | WMOD | 1370 | |
| Mountain Grove, Mo. | KLRS | 1360 | |
| Mountain Home, Ark. | KTLO | 1490 | |
| Mt. Airy, N.C. | WPAQ | 740 | |
| | WSYD | 1300 | M |
| Mt. Carmel, Ill. | WVMC | 1360 | |
| Mt. Clemens, Mich. | WBRB | 1430 | |
| Mt. Dora, Fla. | WMDF | 1580 | |
| Mt. Jackson, Va. | WSIG | 790 | |
| Mt. Kisco, N.Y. | WVIP | 1310 | |
| Mt. Olive, N.C. | WDJS | 1430 | |
| Mt. Pleasant, Mich. | WCEN | 1150 | |
| Mt. Pleasant, Tex. | KIMP | 960 | |
| Mt. Shasta, Calif. | KWSO | 620 | |
| Mt. Sterling, Ky. | WMST | 1150 | |
| Mt. Vernon, Ill. | WMIX | 940 | |
| Mt. Vernon, Ind. | WPCO | 1590 | |
| Mt. Vernon, Ky. | WRVK | 1460 | |
| Mt. Vernon, Ohio | WMVO | 1300 | |
| Mt. Vernon, Wash. | KBRC | 1430 | |
| Muleshoe, Tex. | KMUL | 1380 | |
| Mullins, S.C. | WJAY | 1280 | |
| Muncie, Ind. | WLBC | 1340 | C |
| Munfordville, Ky. | WLOC | 1150 | |
| Munising, Mich. | WMAB | 1400 | |
| Murfreesboro, Tenn. | WGNS | 1450 | |
| | WMTS | 860 | |
| Murphy, N.C. | WCVP | 600 | |
| | WKRK | 1390 | |
| Murphysboro, Ill. | WINI | 1420 | |
| Murray, Ky. | WNBS | 1340 | |
| Murray, Utah | KMUR | 1230 | |
| Muscatine, Iowa | KWPC | 860 | |
| Muscle Shoals City, Alabama | WLAY | 1450 | |
| Muskegon, Mich. | WKBZ | 850 | A |
| | WTRU | 1600 | |
| | WMUS | 1090 | |
| Muskogee, Okla. | KBIX | 1490 | A |
| | KMUS | 1380 | |
| Myrtle Beach, S.C. | WMYB | 1450 | |
| Nacogdoches, Tex. | KEEE | 1230 | A |
| | KSFA | 860 | |
| Nampa, Idaho | KFXD | 580 | |
| | KWLW | 1340 | |
| Nanaimo, B.C. | CHUB | 1570 | |
| Nanticoke, Pa. | WNAK | 730 | |
| Napa, Calif. | KVON | 1440 | |
| Naples, Fla. | WNOG | 1270 | |
| Narrows, Va. | WNRV | 990 | |
| Nashua, N.H. | WOTW | 900 | |
| | WSMN | 1590 | |
| Nashville, Ark. | KBHC | 1260 | |
| Nashville, Ga. | WNGA | 1600 | |
| Nashville, Tenn. | WKDA | 1240 | |
| | WLAC | 1510 | C |
| | WMAK | 1300 | |
| | WNAH | 1360 | M |
| | WSIX | 980 | A |
| | WSM | 650 | N |
| Natchez, Miss. | WMIS | 1240 | N |
| | WNAT | 1450 | M |
| Natchitoches, La. | KNOC | 1450 | M |
| Naugatuck, Conn. | WOWW | 860 | |
| Navasota, Tex. | KWBC | 1550 | |
| Nebraska City, Nebr. | KNCY | 1600 | |
| Needles, Calif. | KSFE | 1340 | |
| Neenah, Wis. | WNAM | 1280 | |
| Neillsville, Wis. | WCCN | 1370 | |
| Nelson, B.C. | CKLN | 1390 | |
| Neon, Ky. | WNKY | 1480 | |
| Neosho, Mo. | KBTN | 1420 | |
| Nevada, Mo. | KNEM | 1240 | |
| New Albany, Ind. | WOWI | 1570 | |
| New Albany, Miss. | WNAU | 1470 | |
| Newark, Del. | WWRK | 1260 | |
| Newark, N.J. | WJRZ | 970 | |
| | WHBI | 1280 | |
| | WNJR | 1430 | |
| | WVNJ | 620 | |
| Newark, N.Y. | WACK | 1420 | |
| Newark, Ohio | WCLT | 1430 | |
| New Bedford, Mass. | WBSM | 1420 | |
| | WNBH | 1340 | M |
| New Bern, N.C. | WHIT | 1450 | M |
| | WRNB | 1490 | |
| Newberry, S.C. | WKDK | 1240 | |
| New Boston, Ohio | WIOI | 1010 | |
| New Braunfels, Tex. | KGNB | 1420 | |
| New Britain, Conn. | WHAY | 910 | A |
| | WRYM | 840 | |
| New Brunswick, N.J. | WCTC | 1450 | |
| Newburgh, N.Y. | WGNY | 1220 | |
| Newburyport, Mass. | WNBP | 1470 | |
| New Carlisle, Que. | CHNC | 610 | |
| New Castle, Ind. | WCTW | 1550 | |
| Newcastle, N.B. | CKMR | 790 | |
| New Castle, Pa. | WKST | 1280 | A |
| Newcastle, Wyo. | KASL | 1240 | |
| New Glasgow, N.S. | CKEC | 1320 | |
| New Haven, Conn. | WAVZ | 1300 | |
| | WELI | 960 | |
| | WNHC | 1340 | A |
| New Iberia, La. | KANE | 1240 | |
| | KVIM | 1360 | |
| New Kensington, Pa. | WKPA | 1150 | |
| New London, Conn. | WNLC | 1510 | M |
| New Martinsville, W.Va. | WETZ | 1330 | M |
| Newnan, Ga. | WCOH | 1400 | M |
| | WNEA | 1300 | |
| New Orleans, La. | WDSU | 1280 | N |
| | WJBW | 1230 | |
| | WJMR | 990 | M |
| | WBOK | 800 | |
| | WNOE | 1060 | |
| | WSMB | 1350 | A |
| | WNPS | 1450 | |
| | WTIX | 690 | |
| | WWL | 870 | C |
| | WWOM | 600 | |
| | WYLD | 940 | M |
| Newport, Ark. | KNBY | 1280 | |
| Newport, Ky. | WNOP | 740 | |
| Newport, N.H. | WCNL | 1010 | |
| Newport, Oreg. | KNPT | 1310 | |
| Newport, R.I. | WADK | 1540 | |
| Newport, Tenn. | WLIK | 1270 | |
| Newport, Vt. | WIKE | 1490 | |
| Newport News, Va. | WGH | 1310 | A |
| | WTID | 1270 | |
| New Richmond, Wis. | WIXK | 1590 | |
| New Rochelle, N.Y. | WVOX | 1460 | |
| New Smyrna Beach, Fla. | WSBB | 1230 | M |
| | WORT | 1550 | |
| Newton, Iowa | KCOB | 1280 | |
| Newton, Kans. | KJRG | 950 | |
| Newton, Miss. | WBKN | 1410 | |
| Newton, N.J. | WNNJ | 1360 | |
| Newton, N.C. | WNNC | 1230 | |
| New Ulm, Minn. | KNUJ | 860 | |
| New Westminster, B.C. | CKNW | 980 | |
| New York, N.Y. | WABC | 770 | A |
| | WBNX | 1380 | |
| | WCBS | 880 | C |
| | WEVD | 1330 | |
| | WHOM | 1480 | |
| | WINS | 1010 | M |
| | WLIB | 1190 | |
| | WMCA | 570 | |
| | WHN | 1050 | |
| | WNEW | 1130 | |
| | WNYC | 830 | |
| | WOR | 710 | |
| | WADO | 1280 | |
| | WPOW | 1330 | |
| | WQXR | 1560 | |
| | WNBC | 660 | N |
| Niagara Falls, N.Y. | WHLD | 1270 | |
| | WJJL | 1440 | M |
| Niagara Falls, Ont. | CHVC | 1600 | |
| Nicholasville, Ky. | WNVL | 1250 | |
| Niles, Mich. | WNIL | 1290 | |
| Nogales, Ariz. | KNOG | 1340 | A |
| Nome, Alaska | KICY | 850 | |
| Norfolk, Nebr. | WJAG | 780 | |
| Norfolk, Va. | WTAR | 790 | C |
| | WCMS | 1050 | |
| | WNOR | 1230 | |
| | WRAP | 850 | |
| Normal, Ill. | WIOK | 1440 | |
| Norman, Okla. | WNAD | 640 | |
| | KNOR | 1400 | |
| Norman Wells, Northwest Territory | CFNW | 1240 | |
| Norristown, Pa. | WNAR | 1110 | |
| N. Adams, Mass. | WMNB | 1230 | |
| N. Augusta, S.C. | WGUS | 1380 | |
| | WTHB | 1550 | |
| N. Battleford, Sask. | CJNB | 1460 | |
| North Bay, Ont. | CFCH | 600 | |
| North Bend, Oreg. | KFIR | 1340 | C |
| North Charleston, S.C. | WNCG | 910 | |
| Northfield, Minn. | WCAL | 770 | |
| Northampton, Mass. | WHMP | 1400 | M |
| N. Little Rock, Ark. | KOXE | 1380 | A |
| | KXLR | 1150 | |
| North Platte, Nebr. | KJLT | 970 | |
| | KODY | 1240 | N |
| No. Syracuse, N.Y. | WSOQ | 1220 | M |
| No. Vancouver, B.C. | CKLG | 730 | |
| N. Vernon, Ind. | WOCH | 1460 | |
| No. Wilkesboro, N.C. | WKBC | 810 | |
| Norton, Va. | WNVA | 1350 | M |
| Norwalk, Conn. | WNLK | 1350 | |
| Norwich, Conn. | WICH | 1310 | |
| Norwich, N.Y. | WCHN | 970 | |
| Oakdale, La. | KREH | 900 | |
| Oakes, N.Dak. | KEYO | 1220 | |
| Oak Grove, La. | KWCL | 1280 | |
| Oak Hill, W.Va. | WOAY | 860 | |
| Oakland, Calif. | KEWB | 910 | |
| | KABL | 960 | |
| | KOIA | 1310 | |
| Oak Park, Ill. | WOPA | 1490 | |
| Oak Ridge, Tenn. | WATO | 1290 | M |
| Oakville, Ont. | CHWO | 1250 | |
| Ocala, Fla. | WMOP | 900 | |
| | WTMC | 1290 | N |
| | WKOS | 1370 | |
| Ocean City, Md. | WETT | 1590 | |
| Oceanlake, Oreg. | KBCH | 1380 | |
| Oceanside, Calif. | KUDE | 1320 | |
| Ocilla, Ga. | WSIZ | 1380 | |
| Odessa, Tex. | KECK | 920 | |
| | KOSA | 1230 | C |
| | KOYL | 1310 | |
| | KRIG | 1410 | M |
| Oelwein, Iowa | KOEL | 950 | |
| Ogallala, Nebr. | KOGA | 930 | |
| Ogden, Utah | KLO | 1430 | M |
| | KANN | 1250 | |
| | KSVN | 730 | |
| | KVOG | 1490 | |
| Ogdensburg, N.Y. | WSLB | 1400 | M |
| Oil City, Pa. | WKRZ | 1340 | |
| Okeechobee, Fla. | WOKC | 1570 | |
| Okla. City, Okla. | KBYE | 890 | A |
| | KLPR | 1140 | |
| | KOCY | 1340 | |
| | KOMA | 1520 | |
| | KTOK | 1000 | A-M |
| | KJEM | 800 | |
| | WKY | 930 | |
| Okmulgee, Okla. | KOKL | 1240 | |
| Old Saybrook, Conn. | WLIS | 1420 | |
| Olean, N.Y. | WMNS | 1360 | |
| | WHDL | 1450 | A |
| Olney, Ill. | WVLN | 740 | |
| Olympia, Wash. | KGY | 1240 | M |
| | KITN | 920 | |
| Omaha, Nebr. | KBON | 1490 | |
| | KFAB | 1110 | N |
| | KOIL | 1290 | |
| | KOOO | 1420 | |
| | KMEO | 660 | M |
| | WOW | 590 | C |
| Omak, Wash. | KOMW | 680 | |
| Oneida, N.Y. | WMCR | 1600 | |
| Oneida, Tenn. | WBNT | 1310 | |
| O'Neill, Nebr. | KBRX | 1350 | |
| Oneonta, Ala. | WCRL | 1570 | |
| Oneonta, N.Y. | WDOS | 730 | |
| Ontario, Calif. | KASK | 1510 | |
| Ontario, Oreg. | KSRV | 1380 | |
| Opelika, Ala. | WPHO | 1400 | M |
| Opelousas, La. | KSLO | 1230 | A |
| Opp, Ala. | WAMI | 860 | |
| Opportunity, Wash. | KZUN | 630 | |
| Orange, Mass. | WCAT | 1390 | |
| Orange, Tex. | KOGT | 1600 | |
| Orange, Va. | WJMA | 1340 | |
| Orangeburg, S.C. | WDIX | 1150 | A |
| | WORG | 1580 | |
| | WTND | 920 | |
| Orange Park, Fla. | WAYR | 550 | |
| Oregon City, Oreg. | KGON | 1520 | M |
| Orillia, Ont. | CFOR | 1570 | |
| Orlando, Fla. | WDBO | 580 | C |
| | WHOO | 990 | M |
| | WHIY | 1270 | |
| | WLOF | 950 | |
| | WKIS | 740 | N |
| Ormond Bch., Fla. | WQXQ | 1380 | |
| Orofino, Idaho | KLER | 950 | |
| Ortonville, Minn. | KDIO | 1350 | |
| Osage Bch., Mo. | KRMS | 1150 | |
| Osceola, Ark. | KOSE | 860 | |
| Oshawa, Ont. | CKLB | 1350 | |
| Oshkosh, Wis. | WOSH | 1490 | A |
| Oskaloosa, Iowa | KBOE | 740 | |
| Oswego, N.Y. | WSGO | 1440 | |
| Othello, Wash. | KRSC | 1400 | |
| Otsego, Mich. | WDMC | 980 | |
| Ottawa, Ill. | WCMY | 1430 | |
| Ottawa, Kans. | KOFO | 1220 | |
| Ottawa, Ont. | CBO | 910 | |
| | CFRA | 580 | |
| | CKOY | 1310 | |
| Ottumwa, Iowa | KBIZ | 1240 | A |
| | KLEE | 1480 | |
| Owatonna, Minn. | KRFO | 1390 | |
| Owego, N.Y. | WEBO | 1330 | |
| Owensboro, Ky. | WOMI | 1490 | M |
| | WVJS | 1420 | A |
| Owen Sound, Ont. | CFOS | 560 | |
| Owosso, Mich. | WOAP | 1080 | |
| Oxford, Miss. | WSUH | 1420 | |
| Oxford, N.C. | WOXF | 1340 | |
| Oxnard, Calif. | KOXR | 910 | |
| Ozark, Ala. | WOZK | 900 | |
| Paducah, Ky. | WKYB | 570 | M |
| | WDXR | 1560 | N |
| | WPAD | 1450 | C |
| Page, Ariz. | KPGE | 1340 | |
| Pahokee, Fla. | WRIM | 1250 | |
| Painesville, Ohio | WPVL | 1460 | |
| Paintsville, Ky. | WSIP | 1490 | M |
| Palatka, Fla. | WWPF | 1260 | |
| | WSUZ | 800 | |
| Palestine, Tex. | KNET | 1450 | |
| Palm Bch., Fla. | WQXT | 1340 | A |
| Palm Sprgs., Calif. | KCMJ | 1010 | C |
| | KDES | 920 | |
| | KPAL | 1450 | |
| Palmdale, Calif. | KUTY | 1470 | |
| Palo Alto, Calif. | KIBE | 1220 | |
| Pampa, Tex. | KPDN | 1340 | M |
| | KHHH | 1230 | |
| Panama City, Fla. | WDLP | 590 | |
| | WPCF | 1430 | A |
| Panama City Beach, Fla. | WTHR | 1480 | |
| | WSCM | 1290 | |
| Paradise, Calif. | KMET | 930 | |
| Paragould, Ark. | KORS | 1490 | |
| Paris, Ark. | KCCL | 1460 | |
| Paris, Ill. | WPRS | 1440 | |
| Paris, Ky. | WKLX | 1440 | |
| Paris, Tenn. | WTPR | 710 | |
| Paris, Tex. | KPLT | 1490 | A |
| | KFTV | 1250 | |
| Parkersburg, W.Va. | WCEF | 1050 | |
| | WPAR | 1450 | C |
| | WTAP | 1230 | A-M |
| Park Falls, Wis. | WPFP | 1450 | |
| Parry Sound, Ont. | CKAR-1 | 1340 | |
| Parsons, Kans. | KLKC | 1540 | |
| Pasadena, Calif. | KALI | 1430 | |
| | KPPC | 1240 | |
| | KWKW | 1300 | |
| Pasadena, Tex. | KLVL | 1480 | |
| | KIKK | 650 | |
| Pascagoula-Moss Point, Miss. | WPMP | 1580 | A |
| Pasco, Wash. | KORD | 910 | |
| | KPKW | 1340 | |
| Paso Robles, Calif. | KPRL | 1230 | M |
| Patchogue, L.I., N.Y. | WALK | 1370 | |
| | WPAC | 1580 | |
| Paterson, N.J. | WPAT | 930 | |
| Pauls Valley, Okla. | KVLH | 1470 | |
| Pawtucket, R.I. | WXTR | 550 | A |
| Payette, Idaho | KEOK | 1450 | |
| Peace River, Alta. | CKYL | 630 | |
| Pecos, Tex. | KIUN | 1400 | M |
| Peekskill, N.Y. | WLNA | 1420 | |
| Pekin, Ill. | WSIV | 1140 | |
| Pell City, Ala. | WFHK | 1430 | |
| Pembroke, Ont. | CHOV | 1350 | |
| Pendleton, Oreg. | KKID | 1240 | A |
| | KUBE | 1050 | |
| | KUMA | 1290 | A |
| Pennington Gap, Va. | WSWV | 1570 | |
| Pensacola, Fla. | WBOP | 980 | |
| | WDEB | 610 | C |
| | WBSR | 1450 | |
| | WNVY | 1230 | A |
| | WCOA | 1370 | N |
| | WPFA | 790 | |
| Penticton, B.C. | CKOK | 800 | |
| Peoria, Ill. | WAAP | 1350 | N |
| | WMBD | 1470 | C |
| | WIRL | 1290 | |
| | WPEO | 1020 | M |
| Perry, Fla. | WPRY | 1400 | |
| Perry, Ga. | WPGA | 980 | |
| Perry, Iowa | KDLS | 1310 | |
| Perryton, Tex. | KEYE | 1400 | M |
| Peru, Ind. | WARU | 1600 | |
| Petaluma, Calif. | KTOB | 1490 | |
| Peterborough, Ont. | CHEX | 980 | |
| | CKPT | 1420 | |
| Petersburg, Va. | WSSV | 1240 | M |
| Petoskey, Mich. | WMBN | 1340 | |
| Phenix City, Ala. | WPNX | 1460 | A |
| Philadelphia, Miss. | WHOC | 1490 | |
| Philadelphia, Pa. | WCAU | 1210 | C |
| | WDAS | 1480 | |
| | WFIL | 560 | A |
| | WFLN | 900 | |
| | WHAT | 1340 | |
| | WIBG | 990 | |
| | WIP | 610 | |
| | WJMJ | 1540 | |
| | WPEN | 950 | M |
| | WRCV | 1060 | N |
| | WTEL | 860 | |
| Philipsburg, Pa. | WPHB | 1260 | |
| Phillipsburg, Kans. | KKAN | 1490 | |
| Phoenix, Ariz. | KIFN | 860 | |
| | KXIV | 1400 | |
| | KHAT | 1480 | |
| | KHEP | 1280 | |
| | KCAC | 1010 | |
| | KOY | 550 | A |
| | KOOL | 960 | C |
| | KPHO | 910 | A |
| | KUEQ | 740 | |
| | KRIZ | 1230 | |
| | KTAR | 620 | N |
| Picayune, Miss. | WRJW | 1320 | |
| Piedmont, Ala. | WPID | 1280 | |
| Pierre, S.Dak. | KGFX | 630 | |
| | KCCR | 1590 | |
| Pikeville, Ky. | WLSI | 900 | |
| | WPKE | 1240 | M |
| Pine Bluff, Ark. | KCLA | 1400 | |
| | KADL | 1270 | |
| | KOTN | 1490 | M |
| | KPBA | 1590 | |
| Pine City, Minn. | WCMP | 1350 | |
| Pineville, Ky. | WMLF | 1230 | |
| Pineville, W.Va. | WWYO | 970 | |
| Pipestone, Minn. | KLOH | 1050 | |
| Piqua, Ohio | WPTW | 1570 | |
| Pittsburg, Calif. | KKIS | 990 | |
| Pittsburg, Kans. | KOAM | 860 | N |
| | KSEK | 1340 | |
| Pittsburgh, Pa. | KDKA | 1020 | |
| | KQV | 1410 | A |
| | WAMO | 860 | |
| | WJAS | 1320 | N |
| | WPIT | 730 | |
| | WRYT | 1250 | |
| | WYRE | 1080 | M |
| | WWSW | 970 | |
| Pittsfield, Ill. | WBBA | 1580 | |
| Pittsfield, Mass. | WBEC | 1420 | A |
| | WBRK | 1340 | M |
| Pittston, Pa. | WPTS | 1540 | |
| Plainfield, N.J. | WERA | 1590 | |
| Plainview, Tex. | KVOP | 1400 | M |
| | KPLA | 1050 | |
| Plant City, Fla. | WPLA | 910 | |
| Platteville, Wis. | WSWW | 1590 | |
| Plattsburg, N.Y. | WEAV | 960 | A-N |
| | WIRY | 1340 | M |
| Pleasanton, Tex. | KBOP | 1380 | |
| Pleasantville, N.J. | WOND | 1400 | |
| Plymouth, Mass. | WPLM | 1390 | |
| Plymouth, N.C. | WPNC | 1470 | |
| Plymouth, Wis. | WPLY | 1420 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Pocahontas, Ark. | KPOC | 1420 | |
| Pocatello, Idaho | KSEI | 930 | N |
| | KWIK | 1240 | M |
| | KSNN | 1290 | |
| Pocomoke City, Md. | WDMV | 540 | |
| Pointe Claire, Que. | CFOX | 1470 | |
| Pomona, Calif. | KWOW | 1600 | |
| | KKAR | 1220 | |
| Pompano Beach, Fla. | WLOD | 980 | |
| | WPOM | 1470 | A |
| Ponca City, Okla. | WBBZ | 1230 | M |
| Ponce, P.R. | WPRP | 910 | |
| | WEUC | 1420 | |
| | WPAB | 550 | |
| | WLEO | 1170 | |
| | WISO | 1260 | |
| Pontiac, Mich. | WPON | 1460 | |
| Pontotoc, Miss. | WSEL | 1440 | |
| Poplar Bluff, Mo. | KWOC | 930 | |
| | KLID | 1340 | |
| Portage, Pa. | WWML | 1470 | |
| Portage, Wis. | WPDR | 1350 | |
| Portage la Prairie, Man. | CFRY | 1570 | |
| Portageville, Mo. | KMIS | 1050 | |
| Port Alberni, B.C. | CJAV | 1240 | |
| Portales, N.Mex. | KENM | 1450 | |
| Port Angeles, Wash. | KAPY | 1000 | D |
| | KONP | 1450 | |
| Port Arthur, Ont. | CFPA | 1230 | |
| Port Arthur, Tex. | KOLE | 1340 | |
| | KPAC | 1250 | M |
| Porterville, Calif. | KTIP | 1450 | A |
| Port Hope, Ont. | CHUC | 1500 | |
| Port Hueneme, Calif. | KACY | 1520 | |
| Port Huron, Mich. | WHLS | 1450 | |
| | WTTH | 1380 | A |
| Port Jervis, N.Y. | WDLC | 1490 | |
| Port Lavaca, Tex. | KGUL | 1560 | |
| Portland, Ind. | WPGW | 1440 | |
| Portland, Maine | WCSH | 970 | N |
| | WGAN | 560 | C |
| | WLOB | 1310 | |
| | WPOR | 1490 | A-M |
| Portland, Oreg. | KBPS | 1450 | |
| | KBEV | 1010 | |
| | KLIQ | 1290 | |
| | KEX | 1190 | |
| | KGW | 620 | N |
| | KOIN | 970 | C |
| | KPAM | 1410 | |
| | KPDQ | 800 | |
| | KPOJ | 1330 | |
| | KWJJ | 1080 | A |
| | KXL | 750 | |
| Port Neches, Tex. | KPNG | 1150 | |
| Portsmouth, N.H. | WBBX | 1380 | |
| | WHEB | 750 | |
| Portsmouth, Ohio | WPAY | 1400 | C |
| | WNXT | 1260 | A |
| Portsmouth, Va. | WHIH | 1400 | A-M |
| | WPMH | 1010 | |
| | WAVY | 1350 | N |
| Post, Tex. | KUKO | 1370 | |
| Poteau, Okla. | KLCO | 1280 | |
| Potosi, Mo. | KYRO | 1280 | |
| Potsdam, N.Y. | WPDM | 1470 | |
| Pottstown, Pa. | WPAZ | 1370 | |
| Pottsville, Pa. | WPAM | 1450 | |
| | WPPA | 1360 | M |
| Poughkeepsie, N.Y. | WEOK | 1390 | |
| | WKIP | 1450 | A |
| Powell, Wyo. | KPOW | 1260 | A-M |
| Poynette, Wis. | WIBU | 1240 | |
| Prairie du Chien, Wis. | WPRE | 980 | |
| Pratt, Kans. | KWSK | 1570 | |
| | KPRT | 1290 | |
| Prescott, Ariz. | KYCA | 1490 | N |
| | KENT | 1340 | |
| | KNOT | 1450 | A |
| Prescott, Ark. | KTPA | 1370 | |
| Presque Isle, Me. | WAGM | 950 | |
| | WEGP | 1390 | |
| Preston, Idaho | KPST | 1340 | |
| Prestonsburg, Ky. | WPRT | 960 | |
| | WDOC | 1310 | |
| Price, Utah | KOAL | 1230 | M |
| Prichard, Ala. | WAIP | 1270 | |
| Prince Albert, Sask. | CKBI | 900 | |
| Prince George, B.C. | CKPG | 550 | |
| Prince Rupert, B.C. | CFPR | 1240 | |
| Princeton, Ind. | WRAY | 1250 | |
| Princeton, Ky. | WPKY | 1580 | |
| Princeton, N.J. | WHWH | 1350 | |
| Princeton, W.Va. | WLOH | 1490 | A |
| Prineville, Oreg. | KRCO | 690 | |
| Prosser, Wash. | KARY | 1310 | |
| Providence, R.I. | WEAN | 790 | C |
| | WHIM | 1110 | |
| | WICE | 1290 | |
| | WJAR | 920 | N |
| | WLKW | 990 | |
| | WPRO | 630 | |
| | WRIB | 1220 | M |
| Provo, Utah | KIXX | 1400 | A |
| | KEYY | 1450 | |
| | KOVO | 960 | M |
| Pryor, Okla. | KOLS | 1570 | |
| Pueblo, Colo. | KDZA | 1230 | |
| | KAPI | 690 | |
| | KFEL | 970 | |
| | KGHF | 1350 | A-M |
| | KCSJ | 590 | |
| | KTUX | 1480 | |
| Pulaski, Tenn. | WKSR | 1420 | A |
| Pulaski, Va. | WPUV | 1580 | |
| Pullman, Wash. | KWSC | 1250 | |
| | KOFE | 1150 | |
| Punxsutawney, Pa. | WPME | 1540 | |
| Putnam, Conn. | WINY | 1350 | |
| Puyallup, Wash. | KAYE | 1450 | |
| Quanah, Tex. | KOLJ | 1150 | |
| Quantico, Va. | WQVA | 1530 | |
| Quebec, Que. | CBV | 980 | |
| | CHRC | 800 | |
| | CJLR | 1060 | |
| | CJQC | 1340 | |
| | CKCV | 1280 | |
| Quesnel, B.C. | CKCQ | 570 | |
| Quincy, Fla. | WCNH | 1230 | M |
| Quincy, Ill. | WGEM | 1440 | A |
| | WTAD | 930 | C |
| Quincy, Mass. | WJDA | 1300 | |
| Quincy, Wash. | KPOR | 1370 | |
| Quitman, Ga. | WSFB | 1490 | |
| Racine, Wis. | WRAC | 1460 | |
| | WRJN | 1400 | A |
| Radford, Va. | WRAD | 1460 | |
| Raleigh, N.C. | WKIX | 850 | A |
| | WPTF | 680 | N |
| | WLLE | 570 | |
| | WRAL | 1240 | |
| Rapid City, S.Dak. | KOTA | 1380 | C |
| | KIMM | 1150 | |
| | KRSD | 1340 | |
| | KEZU | 920 | |
| Raton, N.Mex. | KRTN | 1490 | A |
| Ravenswood, W.Va. | WMOV | 1360 | |
| Rawlins, Wyo. | KRAL | 1240 | A-M |
| Raymond, Wash. | KAPA | 1340 | |
| Raymondville, Tex. | KSOX | 1240 | |
| Rayville, La. | KRIH | 990 | |
| Reading, Pa. | WEEU | 850 | A |
| | WHUM | 1240 | C |
| | WRAW | 1340 | N |
| Redding, Calif. | KRDG | 1230 | M |
| | KAHR | 1330 | |
| | KQMS | 1400 | |
| | KVCV | 600 | C |
| | KVIP | 540 | |
| Red Bluff, Calif. | KBLF | 1490 | |
| Red Deer, Alta. | CKRD | 850 | |
| Redlands, Calif. | KCAL | 1410 | |
| Red Lion, Pa. | WGCB | 1440 | |
| Red Lodge, Mont. | KRBN | 1450 | |
| Redmond, Oreg. | KPRB | 1240 | |
| Red Wing, Minn. | KCUE | 1250 | |
| Redwood Falls, Minn. | KLGR | 1490 | |
| Reedsburg, Wis. | WRDB | 1400 | |
| Reedsport, Oreg. | KRAF | 1470 | |
| Regina, Sask. | CBK | 540 | |
| | CJME | 1300 | |
| | CKCK | 620 | |
| | CKRM | 980 | |
| Reidsville, N.C. | WFRC | 1600 | A |
| | WREV | 1220 | |
| Remsen, N.Y. | WREM | 1480 | |
| Reno, Nev. | KOH | 630 | N |
| | KBET | 1340 | M |
| | KOLO | 920 | C |
| | KONE | 1450 | |
| | KDOT | 1230 | |
| Rensselaer, N.Y. | WEEE | 1300 | |
| Rexburg, Idaho | KRXK | 1230 | |
| Rhinelander, Wis. | WOBT | 1240 | |
| Rice Lake, Wis. | WJMC | 1240 | M |
| Richfield, Utah | KSVC | 980 | |
| Richland, Wash. | KALE | 960 | |
| Richland, Wis. | WRCO | 1450 | |
| Richlands, Va. | WRIC | 540 | |
| Richmond, Ind. | WKBV | 1490 | A |
| Richmond, Ky. | WEKY | 1340 | M |
| Richmond, Va. | WANT | 990 | |
| | WBBL | 1480 | |
| | WRGM | 1590 | |
| | WLEE | 1480 | M |
| | WEET | 1320 | |
| | WMBG | 1380 | A |
| | WRNL | 910 | C |
| | WRVA | 1140 | N |
| | WXGI | 950 | |
| Richmond Hill, Ont. | CJRH | 1310 | |
| Richwood, W.Va. | WVAR | 1280 | |
| Ridgecrest, Calif. | KRCK | 1360 | |
| | KLOA | 1240 | |
| Rimouski, Que. | CJBR | 900 | |
| Rio Piedras, P.R. | WRIO | 1320 | |
| | WWWW | 1520 | |
| Ripley, Tenn. | WTRB | 1570 | |
| Ripon, Wis. | WCWC | 1600 | |
| Riverhead, N.Y. | WRIV | 1390 | |
| | WAPC | 1570 | |
| Riverside, Calif. | KPRO | 1440 | |
| | KACE | 1570 | |
| Riverton, Wyo. | KVOW | 1450 | M |
| Riviera Beach, Fla. | WHEW | 1600 | |
| Riviere du Loup, Que. | CJFP | 1400 | |
| Roanoke, Ala. | WELR | 1360 | |
| Roanoke, Va. | WDBJ | 960 | C |
| | WRIS | 1410 | M |
| | WHYE | 910 | |
| | WROV | 1240 | A |
| | WSLS | 610 | N |
| Roanoke Rapids, N.C. | WCBT | 1230 | M |
| Roaring Sprgs., Pa. | WKMC | 1370 | |
| Roberval, Que. | CHRL | 910 | |
| Robinson, Ill. | WTAY | 1570 | |
| Rochester, Minn. | KROC | 1340 | N |
| | KWEB | 1270 | |
| Rochester, N.H. | WWNH | 930 | |
| Rochester, N.Y. | WBBF | 950 | M |
| | WHAM | 1180 | N |
| | WHEC | 1460 | C |
| | WRVM | 680 | |
| | WSAY | 1370 | |
| | WROC | 1280 | N |
| Rockford, Ill. | WROK | 1440 | A |
| | WJRL | 1150 | |
| | WRRR | 1330 | |
| Rock Hill, S.C. | WRHI | 1340 | M |
| | WTYC | 1150 | |
| Rockingham, N.C. | WAYN | 900 | |
| Rock Island, Ill. | WHBF | 1270 | C |
| Rockland, Maine | WRKD | 1450 | A |
| Rockmart, Ga. | WPLK | 1220 | |
| Rock Springs, Wyo. | KVRS | 1360 | A-M |
| Rockville, Md. | WINX | 1600 | |
| Rockwood, Tenn. | WRKH | 580 | |
| Rocky Ford, Colo. | KAVI | 1320 | |
| Rocky Mount, N.C. | WCEC | 810 | |
| | WEED | 1390 | A |
| | WRMT | 1490 | |
| | WKWS | 1290 | |
| Rocky Mount, Va. | WYTI | 1570 | |
| Rogers, Ark. | KAMO | 1390 | |
| Rogers City, Mich. | WHAK | 960 | |
| Rogersville, Tenn. | WRGS | 1370 | |
| Rolla, Mo. | KCLU | 1590 | |
| | KTTR | 1490 | |
| Rome, Ga. | WLAQ | 1410 | A |
| | WRGA | 1470 | C |
| | WROM | 710 | |
| Rome, N.Y. | WKAL | 1450 | A |
| | WRNY | 1350 | |
| Ronceverte, W.Va. | WRON | 1400 | |
| Roseburg, Oreg. | KRNR | 1490 | C |
| | KRXL | 1250 | |
| | KYES | 950 | |
| Rosenberg, Tex. | KFRD | 980 | |
| Rossville, Ga. | WRIP | 980 | |
| Roswell, N.Mex. | KRSY | 1230 | |
| | KGFL | 1430 | M |
| | KBIM | 910 | |
| Rouyn, Que. | CKRN | 1400 | |
| Roxboro, N.C. | WRXO | 1430 | |
| Royal Oak, Mich. | WEXL | 1340 | |
| Rugby, N. Dak. | KGCA | 1450 | |
| Ruidoso, N.Mex. | KRRR | 1340 | |
| Rumford, Me. | WRUM | 790 | |
| Rupert, Idaho | KAYT | 970 | |
| Rushton, La. | KRUS | 1490 | |
| Rusk, Texas | KTLU | 1580 | |
| Russell, Kans. | KRSL | 990 | |
| Russellville, Ala. | WWWR | 920 | |
| Russellville, Ark. | KXRJ | 1490 | |
| Russellville, Ky. | WRUS | 610 | |
| Rutland, Vt. | WHWB | 1000 | |
| | WSYB | 1380 | M |
| Sackville, N.B. | CBA | 1070 | |
| Sacramento, Calif. | KCRA | 1320 | N |
| | KFBK | 1530 | A |
| | KGMS | 1380 | M |
| | KRAK | 1140 | M |
| | KROY | 1240 | C |
| | KXOA | 1470 | |
| Safford, Ariz. | KGLU | 1480 | A |
| | KATO | 1230 | |
| Sag Harbor, N.Y. | WLNG | 1600 | |
| Saginaw, Mich. | WKNX | 1210 | |
| | WSAM | 1400 | N |
| | WSGW | 790 | C |
| St. Albans, Vt. | WWSR | 1420 | |
| St. Albans, W.Va. | WKLC | 1300 | |
| St. Anne-de-la-Pocatiere, Que. | CHGB | 1310 | |
| St. Augustine, Fla. | WFOY | 1240 | C |
| | WETH | 1420 | |
| St. Boniface, Man. | CKSB | 1050 | |
| St. Catherines, Ont. | CKTB | 610 | |
| St. Charles, Mo. | KADY | 1460 | |
| St. Cloud, Minn. | KFAM | 1450 | N |
| | WJON | 1240 | |
| St. George, Utah | KDXU | 1450 | |
| St. Helen, Mich. | WMIC | 1590 | |
| St. Helens, Oreg. | KOHI | 1600 | |
| St. Hyacinthe, Que. | CKBS | 1240 | |
| St. Jean, Que. | CHRS | 1090 | |
| St. Jerome, Que. | CKJL | 900 | |
| Saint John, N.B. | CFBC | 930 | |
| | CHSJ | 1150 | |
| St. Johns, Mich. | WJUD | 1580 | |
| St. John's, Nfld. | CBN | 640 | |
| | CJON | 930 | |
| | VOAR | 1230 | |
| | VOCM | 590 | |
| | VOWR | 800 | |
| St. Johnsbury, Vt. | WTWN | 1340 | |
| St. Joseph, Mich. | WSJM | 1400 | |
| St. Joseph, Mo. | KFEQ | 680 | |
| | KKJO | 1550 | M |
| | KUSN | 1270 | |
| St. Joseph d'Alma, Que. | CFGT | 1270 | |
| St. Louis, Mo. | KATZ | 1600 | |
| | KFUO | 850 | |
| | KMOX | 1120 | C |
| | KSD | 550 | N |
| | KSTL | 690 | |
| | KWK | 1380 | |
| | KXOK | 630 | |
| | WEW | 770 | M |
| | WIL | 1430 | A |
| St. Louis Park, Minn. | KRSI | 950 | |
| St. Mary's, Pa. | WKBI | 1400 | |
| St. Paul, Minn. | KSTP | 1500 | N |
| | KDWB | 630 | M |
| St. Peter, Minn. | KRBI | 1310 | |
| St. Petersburg, Fla. | WPIN | 680 | |
| | WSUN | 620 | A |
| | WLCY | 1380 | M |
| St. Petersburg Beach, Fla. | WILZ | 1590 | |
| St. Thomas, Ont. | CHLO | 680 | |
| Salamanca, N.Y. | WGGO | 1590 | |
| Salem, Ill. | WJBD | 1350 | |
| Salem, Ind. | WSLM | 1220 | |
| Salem, Mass. | WESX | 1230 | M |
| Salem, Mo. | KSMO | 1340 | |
| Salem, Oreg. | KSLM | 1390 | A |
| | KAPT | 1220 | |
| | KBZY | 1490 | N |
| | KGAY | 1430 | |
| Salem, Va. | WBLU | 1480 | |
| Salida, Colo. | KVRH | 1340 | M |
| Salina, Kans. | KSAL | 1150 | M |
| Salinas, Calif. | KOON | 1460 | |
| | KSBW | 1380 | M |
| Saline, Mich. | WOIA | 1290 | |
| Salisbury, Md. | WBOC | 960 | |
| | WICO | 1320 | A |
| | WJDY | 1470 | |
| Salisbury, N.C. | WSTP | 1490 | M |
| | WSAT | 1280 | A |
| Salmon, Idaho | KSRA | 960 | |
| Salt Lake City, Utah | KALL | 910 | A |
| | KCPX | 1320 | N |
| | KLUB | 570 | M |
| | KNAK | 1280 | |
| | KSL | 1160 | C |
| | KSOP | 1370 | |
| | KSXX | 630 | |
| | KWHO | 860 | |
| | KWIC | 1570 | |
| San Angelo, Tex. | KTEO | 1340 | |
| | KGKL | 960 | A |
| | KPEP | 1420 | |
| | KWFR | 1260 | |
| San Antonio, Tex. | KAPE | 1480 | |
| | KCOR | 1350 | |
| | KENS | 680 | C |
| | KBER | 1150 | |
| | KITE | 930 | |
| | KUKA | 1250 | |
| | KUBO | 1310 | |
| | KMAC | 630 | A |
| | KONO | 860 | |
| | KTSA | 550 | |
| | WOAI | 1200 | N |
| San Bernardino, Calif. | KCKC | 1350 | |
| | KFXM | 590 | |
| | KRNO | 1240 | |
| | KMEN | 1290 | M |
| Sandersville, Ga. | WSNT | 1490 | |
| San Diego, Calif. | KCBQ | 1170 | |
| | KFMB | 540 | C |
| | KOGO | 600 | N |
| | KGB | 1360 | A |
| | KSON | 1240 | |
| | KSDO | 1130 | |
| Sandpoint, Idaho | KSPT | 1400 | |
| Sand Spring, Okla. | KTOW | 1340 | |
| Sandusky, Ohio | WLEC | 1450 | M |
| San Fernando, Calif. | KGIL | 1260 | |
| Sanford, Fla. | WTRR | 1400 | |
| | WSFR | 1360 | |
| Sanford, Me. | WSME | 1220 | |
| Sanford, N.C. | WEYE | 1290 | |
| | WWGP | 1050 | |
| San Francisco, Calif. | KFRC | 610 | M |
| | KCBS | 740 | C |
| | KFAX | 1100 | |
| | KGO | 810 | A |
| | KNBC | 680 | N |
| | KKHI | 1550 | M |
| | KSAY | 1010 | |
| | KSAN | 1450 | |
| | KSFO | 560 | |
| | KYA | 1260 | |
| San German, P.R. | WRJS | 1090 | |
| San Jose, Calif. | KLOK | 1170 | |
| | KLIV | 1590 | M |
| | KEEN | 1370 | |
| | KXRX | 1500 | |
| San Juan, P.R. | WAPA | 680 | M |
| | WHOA | 870 | |
| | WIAC | 740 | |
| | WIPR | 940 | |
| | WKAQ | 580 | C |
| | WKVM | 810 | |
| | WKYN | 630 | |
| | WITA | 1140 | |
| San Luis Obispo, Calif. | KATY | 1340 | |
| | KCJH | 1280 | |
| | KSLY | 1400 | |
| | KVEC | 920 | M |
| San Marcos, Tex. | KCNY | 1470 | |
| San Mateo, Calif. | KOFY | 1050 | |
| San Rafael, Calif. | KTIM | 1510 | |
| San Saba, Tex. | KBAL | 1410 | |
| Santa Ana, Calif. | KWIZ | 1480 | |
| Santa Barbara, Cal. | KDB | 1490 | |
| | KGUD | 990 | |
| | KIST | 1340 | N |
| | KTMS | 1250 | A-M |
| | KACL | 1290 | |
| Santa Cruz, Calif. | KSCO | 1080 | |
| Santa Fe, N.Mex. | KTRC | 1400 | A |
| | KVSF | 1260 | C |
| Santa Maria, Cal. | KCOY | 1400 | |
| | KHER | 1600 | |
| | KSMA | 1240 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | KSEE | 1480 | |
| Santa Monica, Cal. | KDAY | 1580 | |
| Santa Paula, Calif. | KSPA | 1400 | |
| Santa Rosa, Calif. | KSRO | 1350 | |
| | KHUM | 1580 | |
| | KVRE | 1460 | |
| | KJAX | 1150 | |
| Santa Rosa, N.Mex. | KSYX | 1420 | |
| Saranac Lake, N.Y. | WNBZ | 1240 | A |
| Sarasota, Fla. | WKXY | 930 | |
| | WSAF | 1220 | |
| | WSPB | 1450 | C |
| | WYND | 1280 | |
| Saratoga Springs, N.Y. | WSPN | 900 | |
| Sarnia, Ont. | CHOK | 1070 | |
| Saskatoon, Sask. | CFQC | 600 | |
| | CFNS | 1170 | |
| | CKOM | 1250 | |
| Sault Ste. Marie, Michigan | WSOO | 1230 | |
| Sault Ste. Marie, Ontario | CJIC | 1050 | |
| | CKCY | 920 | |
| Savannah, Ga. | WBYG | 1450 | M |
| | WEAS | 900 | |
| | WSAV | 630 | N |
| | WSGA | 1400 | |
| | WTOC | 1290 | C |
| | WSOK | 1230 | A |
| Savannah, Tenn. | WORM | 1010 | |
| Sayre, Pa. | WATS | 960 | |
| Schefferville, Que. | CFKL | 1230 | |
| Schenectady, N.Y. | WGY | 810 | N |
| | WSNY | 1240 | |
| Scotland Neck, N.C. | WYAL | 1280 | |
| Scottsbluff, Nebr. | KNEB | 960 | A-M |
| | KOLT | 1320 | C |
| Scottsboro, Ala. | WCRI | 1050 | |
| | WROS | 1330 | |
| Scottsdale, Ariz. | KWBY | 1440 | |
| Scottsville, Ky. | WLCK | 1250 | |
| Scranton, Pa. | WARM | 590 | A |
| | WEJL | 630 | |
| | WGBI | 910 | C |
| | WICK | 1400 | |
| | WSCR | 1320 | N |
| Seaford, Del. | WSUX | 1280 | |
| Searcy, Ark. | KWCB | 1300 | |
| Seaside, Oreg. | KSRG | 730 | |
| Seattle, Wash. | KAYO | 1150 | M |
| | KUDY | 910 | |
| | KING | 1090 | A |
| | KIRO | 710 | C |
| | KJR | 950 | |
| | KOL | 1300 | |
| | KOMO | 1000 | N |
| | KETO | 1590 | |
| | KTW | 1250 | |
| | KVI | 570 | |
| | KXA | 770 | |
| Sebring, Fla. | WJCM | 960 | |
| | WSEB | 1340 | |
| Sedalia, Mo. | KDRO | 1490 | |
| | KSIS | 1050 | |
| Seguin, Tex. | KWED | 1580 | |
| Selma, Ala. | WGWC | 1340 | C |
| | WHBB | 1490 | |
| | WRWJ | 1570 | |
| Seminole, Tex. | KTFO | 1250 | |
| Seneca Township, S.C. | WSNW | 1150 | |
| Sevierville, Tenn. | WSEV | 930 | |
| Seward, Alaska | KIBH | 1340 | C-A |
| Seymour, Ind. | WJCD | 1390 | |
| Seymour, Tex. | KSEY | 1230 | |
| Shamokin, Pa. | WISL | 1480 | |
| Shamrock, Tex. | KBYP | 1580 | |
| Sharon, Pa. | WPIC | 790 | |
| Shawano, Wis. | WTCH | 960 | |
| Shawinigan, Que. | CKSM | 1220 | |
| Shawnee, Okla. | KGFF | 1450 | M |
| Sheboygan, Wis. | WHBL | 1330 | A |
| | WKTS | 950 | |
| Sheffield, Ala. | WSHF | 1290 | |
| Shelby, Mont. | KSEN | 1150 | M |
| Shelby, N.C. | WOHS | 730 | M |
| | WADA | 1390 | |
| Shelbyville, Ind. | WSVL | 1520 | |
| Shelbyville, Tenn. | WHAL | 1400 | |
| | WLIJ | 1580 | |
| Shenandoah, Iowa | KFNF | 920 | |
| | KMA | 960 | A |
| Sherbrooke, Que. | CHLT | 630 | |
| | CKTS | 900 | |
| Sheridan, Wyo. | KWYO | 1410 | M |
| | KROE | 930 | |
| Sherman, Tex. | KRRV | 910 | M |
| | KTXO | 1500 | |
| Shippensburg, Pa. | WSHP | 1480 | |
| Show Low, Ariz. | KVWM | 1050 | |
| Shreveport, La. | KANB | 1300 | |
| | KBCL | 1220 | |
| | KCIJ | 1050 | C |
| | KEEL | 710 | |
| | KREB | 1550 | M |
| | KJOE | 1480 | M |
| | KOKA | 980 | |
| | KRMD | 1340 | A |
| | KWKH | 1130 | C |
| Sidney, Mont. | KGCX | 1480 | M |
| Sidney, Nebr. | KSID | 1340 | A |
| Sierra Vista, Ariz. | KHFH | 1420 | A |
| Sikeston, Mo. | KSIM | 1400 | |
| Siler City, N.C. | WNCA | 1570 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Siloam Sprgs., Ark. | KUOA | 1290 | M |
| Silsbee, Tex. | KKAS | 1300 | |
| Silver City, N.Mex. | KSIL | 1340 | C |
| Silver Sprgs., Md. | WQMR | 1050 | |
| Simcoe, Ont. | CFRS | 1560 | |
| Sinton, Tex. | KTOD | 1590 | |
| Sioux City, Iowa | KSCJ | 1360 | A |
| | KMNS | 620 | M |
| | KTRI | 1470 | |
| Sioux Falls, S.Dak. | KISD | 1230 | |
| | KELO | 1320 | |
| | KNWC | 1270 | |
| | KSOO | 1140 | A |
| Sitka, Alaska | KIFW | 1230 | C-A |
| | KSEW | 1400 | |
| Skowhegan, Maine | WGHM | 1150 | |
| Slaton, Tex. | KCAS | 1050 | |
| Smithfield, N.C. | WMPM | 1270 | |
| Smiths Falls, Ont. | CJET | 630 | |
| Smyrna, Ga. | WSMA | 1550 | |
| Snyder, Tex. | KSNY | 1450 | M |
| Socorro, N.Mex. | KSRC | 1290 | |
| Soda Sprgs., Idaho | KBRV | 540 | |
| Solvay, N.Y. | WQSR | 1320 | |
| Somerset, Ky. | WSFC | 1240 | M |
| | WTLO | 1480 | |
| Somerset, Pa. | WVSC | 990 | |
| Sonora, Calif. | KVML | 1450 | |
| Sonora, Tex. | KCKG | 1240 | |
| Sorel, P.Q. | CJSO | 1320 | |
| South Beloit, Ill. | WBEL | 1380 | |
| So. Bend, Ind. | WNDU | 1490 | A |
| | WJVA | 1580 | M |
| | WSBT | 960 | C |
| Southbridge, Mass. | WESO | 970 | |
| So. Boston, Va. | WHLF | 1400 | A |
| Southern Pines, N.C. | WEEB | 990 | |
| South Daytona Beach, Florida | WELE | 1590 | |
| So. Gastonia, N.C. | WGAS | 1420 | |
| So. Haven, Mich. | WJOR | 940 | |
| So. Knoxville, Tenn. | WSKT | 1580 | |
| So. Paris, Me. | WKTQ | 1450 | |
| So. Pittsburg, Tenn. | WEPG | 910 | |
| So. St. Paul, Minn. | KDWB | 630 | M |
| So. Williamsport, Pa. | WMPT | 1450 | |
| Spanish Fork, Utah | KONI | 1480 | |
| Sparks, Nev. | KBUB | 1270 | |
| Sparta, Ill. | WHCO | 1230 | |
| Sparta, Tenn. | WSMT | 1050 | |
| Sparta, Wis. | WKLJ | 990 | |
| | WCOW | 1290 | |
| Spartanburg, S.C. | WZOO | 1400 | M |
| | WORD | 910 | N |
| | WSPA | 950 | C |
| Spencer, Iowa | KICD | 1240 | |
| Spencer, W.Va. | WSPZ | 1400 | |
| Spokane, Wash. | KGA | 1510 | A |
| | KLYK | 1230 | |
| | KPEG | 1380 | |
| | KHQ | 590 | N |
| | KNEW | 790 | M |
| | KREM | 970 | |
| | KXLY | 920 | C |
| | KCFA | 1330 | |
| Springdale, Ark. | KBRS | 1340 | A |
| Springfield, Ill. | WCVS | 1450 | A-M |
| | WMAY | 970 | N |
| | WTAX | 1240 | C |
| Springfield, Mass. | WBZA | 1030 | |
| | WHYN | 560 | C |
| | WMAS | 1450 | M |
| | WSPR | 1270 | |
| Springfield, Mo. | KGBX | 1260 | N |
| | KICK | 1340 | |
| | KTTS | 1400 | C |
| | KWTO | 560 | A |
| Springfield, Ohio | WIZE | 1340 | A |
| | WBLY | 1600 | |
| Springfield, Oreg. | KEED | 1050 | |
| Springfield, Tenn. | WDBL | 1590 | |
| Springfield, Vt. | WCFR | 1480 | |
| Springhill, La. | KBSF | 1460 | |
| Spruce Pine, N.C. | WTOE | 1470 | |
| Stamford, Conn. | WSTC | 1400 | A |
| Stamford, Tex. | KDWT | 1400 | |
| Stanford, Ky. | WRSL | 1520 | |
| Starke, Fla. | WRGR | 1490 | |
| Starkville, Miss. | WSSO | 1230 | |
| State College, Pa. | WMAJ | 1450 | N |
| | WRSC | 1390 | |
| Statesboro, Ga. | WWNS | 1240 | |
| Statesville, N.C. | WSIC | 1400 | |
| | WDBM | 550 | |
| Staunton, Va. | WTON | 1240 | A |
| | WAFC | 900 | |
| Stephenville, Tex. | KSTV | 1510 | |
| Sterling, Colo. | KGEK | 1230 | |
| | KOLR | 1490 | |
| Sterling, Ill. | WSDR | 1240 | |
| Steubenville, Ohio | WSTV | 1340 | M |
| Stevens Point, Wis. | WSPT | 1010 | |
| Stillwater, Minn. | WAVN | 1220 | |
| Stillwater, Okla. | KSPI | 780 | |
| Stockton, Calif. | KJOY | 1280 | |
| | KSTN | 1420 | |
| | KWG | 1230 | A |
| Storm Lake, Iowa | KAYL | 990 | |
| Stratford, Ont. | CJCS | 1240 | |
| Streator, Ill. | WIZZ | 1250 | |
| Stroudsburg, Pa. | WVPO | 840 | |
| Stuart, Fla. | WSTU | 1450 | M |
| Stuart, Va. | WHEO | 1270 | |
| Sturgeon Bay, Wis. | WDOR | 910 | |
| Sturgis, Mich. | WSTR | 1230 | |
| Stuttgart, Ark. | KWAK | 1240 | M |
| Sudbury, Ont. | CKSO | 790 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| | CFBR | 550 | |
| | CHNO | 900 | |
| Suffolk, Va. | WLPM | 1460 | A |
| Sulphur, La. | KIKS | 1310 | |
| Sulphur Sprgs., Tex. | KSST | 1230 | |
| Summerside, P.E.I. | CJRW | 1240 | |
| Summerville, Ga. | WGTA | 930 | |
| Sumter, S.C. | WFIG | 1290 | M |
| | WDXY | 1240 | |
| | WSSC | 1340 | A |
| Sunbury, Pa. | WKOK | 1240 | C |
| Sunnyside, Wash. | KREW | 1230 | |
| Sun Valley, Ida. | KSKI | 1340 | |
| Superior, Nebr. | KRFS | 1600 | |
| Superior, Wis. | WDSM | 710 | N |
| | WIGL | 970 | |
| | WQMN | 1320 | |
| Susanville, Calif. | KSUE | 1240 | |
| Swainsboro, Ga. | WJAT | 800 | |
| Sweetwater, Tenn. | WDEH | 800 | |
| Sweetwater, Tex. | KXOX | 1240 | |
| Swift Current, Sask. | CKSW | 1400 | |
| Sydney, N.S. | CBI | 1140 | |
| | CJCB | 1270 | |
| Sylacauga, Ala. | WFEB | 1340 | M |
| | WMLS | 1290 | |
| Sylva, N.C. | WMSJ | 1480 | |
| Sylvania, Ga. | WSYL | 1490 | |
| Syracuse, N.Y. | WHEN | 620 | C |
| | WFBL | 1390 | M |
| | WNDR | 1260 | |
| | WOLF | 1490 | A |
| | WSYR | 570 | N |
| Tabor City, N.C. | WTAB | 1370 | |
| Tacoma, Wash. | KMO | 1360 | |
| | KTAC | 850 | |
| | KTNT | 1400 | |
| | KVI | 570 | M |
| Taft, Calif. | KTKR | 1310 | |
| Tahlequah, Okla. | KTLQ | 1350 | |
| Talladega, Ala. | WJHB | 1580 | |
| | WNUZ | 1230 | M |
| Tallahassee, Fla. | WMEN | 1330 | |
| | WRFB | 1410 | |
| | WTAL | 1270 | M |
| | WTNT | 1450 | C |
| Tallassee, Ala. | WTLS | 1300 | |
| Tallulah, La. | KTLD | 1360 | |
| Tampa, Fla. | WALT | 1110 | |
| | WDAE | 1250 | C |
| | WZST | 1550 | |
| | WFLA | 970 | N |
| | WHBO | 1050 | M |
| | WINQ | 1010 | |
| | WTMP | 1150 | |
| | WSOL | 1300 | |
| Taos, N. Mex. | KKIT | 1340 | |
| Tarboro, N.C. | WCPS | 760 | |
| Tarpon Sprgs., Fla. | WRBB | 1470 | |
| Tasley, Va. | WESR | 1330 | |
| Taunton, Mass. | WPEP | 1570 | |
| Tawas City, Mich. | WIOS | 1480 | |
| Taylor, Tex. | KTAE | 1260 | |
| Taylorsville, N.C. | WTLK | 1570 | |
| Taylorville, Ill. | WTIM | 1410 | |
| Tazewell, Tenn. | WNTT | 1250 | |
| Tell City, Ind. | WTCJ | 1230 | |
| Tempe, Ariz. | KUPD | 1060 | |
| | KYND | 1580 | |
| Temple, Tex. | KTEM | 1400 | |
| Terrace, B.C. | CFTK | 1140 | |
| Terre Haute, Ind. | WBOW | 1230 | N |
| | WMFT | 1300 | A |
| | WTHI | 1480 | C |
| Terrell, Tex. | KTER | 1570 | |
| Terrytown, Nebr. | KTCI | 690 | |
| Texarkana, Ark. | KOSY | 790 | M |
| Texarkana, Tex. | KCMC | 740 | A |
| | KATQ | 940 | |
| | KTFS | 1400 | |
| Texas City, Tex. | KTLW | 920 | |
| Thayer, Mo. | KALM | 1290 | |
| The Dalles, Oreg. | KODL | 1440 | |
| | KRMW | 1300 | |
| Thermopolis, Wyo. | KRTR | 1490 | M |
| | KTHE | 1240 | |
| Thief River Falls, Minn. | KTRF | 1230 | |
| Thetford Mines, Que. | CKLD | 1230 | |
| Thibodaux, La. | KTIB | 630 | |
| Thomaston, Ga. | WSFT | 1220 | |
| | WTGA | 1590 | |
| Thomasville, Ala. | WJDB | 630 | |
| Thomasville, Ga. | WPAX | 1240 | |
| | WKTG | 730 | |
| Thomasville, N.C. | WTNC | 790 | |
| Thomson, Ga. | WTWA | 1240 | M |
| Three Rivers, Mich. | WLKM | 1510 | |
| Three Rivers, Que. | CHLN | 550 | |
| | CKTR | 1150 | |
| Ticonderoga, N.Y. | WIPS | 1250 | |
| Tiffin, Ohio | WTTF | 1600 | M |
| Tifton, Ga. | WTIF | 1340 | |
| | WWGS | 1430 | |
| Tillamook, Oreg. | KTIL | 1590 | |
| Tillsonburg, Ont. | CKOT | 1510 | |
| Timmins, Ont. | CFCL | 620 | |
| | CKGB | 680 | |
| Titusville, Fla. | WRMF | 1050 | |
| Titusville, Pa. | WTIV | 1230 | |
| Toccoa, Ga. | WLET | 1420 | M |
| | WNES | 630 | |
| Toledo, Ohio | WOHO | 1470 | M |
| | WSPD | 1370 | N |
| | WTOD | 1560 | C |
| | WTOL | 1230 | A |
| Toledo, Oreg. | KTDO | 1230 | |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Tolleson, Ariz. | KZON | 1190 | |
| Tomah, Wis. | WTMB | 1460 | |
| Tompkinsville, Ky. | WTKY | 1370 | |
| Tooele, Utah | KDYL | 990 | |
| Topeka, Kans. | WIBW | 580 | C |
| | KEWI | 1440 | |
| | WREN | 1250 | A |
| | KTOP | 1490 | M |
| Toppenish, Wash. | KENE | 1490 | |
| Toronto, Ont. | CBL | 740 | N |
| | CFRB | 1010 | C |
| | CHUM | 1050 | M |
| | CJBC | 860 | |
| | CKEY | 580 | M |
| | CKFH | 1430 | |
| Torrington, Conn. | WBZY | 990 | |
| | WTOR | 1490 | M |
| Torrington, Wyo. | KGOS | 1490 | |
| Towanda, Pa. | WTTC | 1550 | |
| Towson, Md. | WAQE | 1570 | |
| Trail, B.C. | CJAT | 610 | |
| Traverse City, Mich. | WTCM | 1400 | |
| | WCCW | 1310 | |
| Trenton, Mo. | KTTN | 1600 | |
| Trenton, N.J. | WAAT | 1300 | |
| | WBUD | 1260 | |
| | WTTM | 920 | M |
| Trinidad, Colo. | KCRT | 1240 | M |
| Troy, Ala. | WTBF | 970 | M |
| Troy, N.Y. | WHAZ | 1330 | |
| | WTRY | 980 | |
| Troy, N.C. | WXKW | 1000 | |
| | WJRM | 1390 | |
| Truckee, Calif. | KHOE | 1400 | |
| Truro, N.S. | CKCL | 600 | |
| Truth or Consequences, New Mexico | KCHS | 1400 | |
| Tryon, N.C. | WTYN | 1550 | M |
| Tucson, Ariz. | KTUC | 1400 | A |
| | KXEW | 1600 | |
| | KAIR | 1490 | |
| | KCEE | 790 | |
| | KTAN | 580 | A |
| | KCUB | 1290 | M |
| | KEVT | 690 | |
| | KOBY | 940 | |
| | KMOP | 1330 | |
| | KFIF | 1550 | |
| | KTKT | 990 | |
| | KOLD | 1450 | C |
| Tucumcari, N.Mex. | KTNM | 1400 | M |
| Tulare, Calif. | KCOK | 1270 | M |
| | KGEN | 1370 | |
| Tulia, Tex. | KTUE | 1260 | |
| Tullahoma, Tenn. | WJIG | 740 | |
| Tulsa, Okla. | KAKC | 970 | |
| | KOME | 1300 | |
| | KRMG | 740 | C |
| | KELI | 1430 | C |
| | KVOO | 1170 | N |
| | KFMJ | 1050 | |
| Tupelo, Miss. | WELO | 580 | M |
| | WTUP | 1490 | A |
| Turlock, Calif. | KCEY | 1390 | |
| Tuscaloosa, Ala. | WJRD | 1150 | |
| | WACT | 1420 | |
| | WNPT | 1280 | A |
| | WTUG | 790 | |
| | WTBC | 1230 | M |
| Tuscumbia, Ala. | WVNA | 1590 | |
| | WRCK | 1410 | |
| Tuskegee, Ala. | WABT | 580 | |
| Twenty-Nine Palms, Calif. | KDHI | 1250 | |
| Twin Falls, Idaho | KTFI | 1270 | N |
| | KLIX | 1310 | M |
| | KEEP | 1450 | |
| Two Rivers, Wis. | WTRW | 1590 | |
| Tyler, Tex. | KDOK | 1330 | |
| | KGJB | 1490 | M |
| | KTBB | 600 | A |
| | KZEY | 690 | |
| Tyrone, Pa. | WTRN | 1340 | |
| Ukiah, Calif. | KUKI | 1400 | |
| | KMSL | 1250 | |
| | KKCN | 1300 | |
| Union, Mo. | KLPW | 1220 | |
| Union, S.C. | WBCU | 1460 | |
| Union City, Tenn. | WENK | 1240 | |
| Uniontown, Pa. | WMBS | 590 | C |
| Urbana, Ill. | WILL | 580 | |
| | WKID | 1580 | |
| Utica, N.Y. | WIBX | 950 | C |
| | WBVM | 1550 | |
| | WRUN | 1150 | |
| | WTLB | 1310 | A |
| Uvalde, Tex. | KVOU | 1400 | |
| Val D'Or, Que. | CKVD | 1230 | |
| Valdese, N.C. | WSUM | 1490 | |
| Valdosta, Ga. | WGOV | 950 | M |
| | WGAF | 910 | A |
| | WJEM | 1150 | |
| | WVLD | 1450 | |
| Valentine, Nebr. | KVSH | 940 | |
| Vallejo, Calif. | KNBA | 1190 | |
| Valley City, N.Dak. | KOVC | 1490 | M |
| Valleyfield, P.R. | CFLV | 1370 | |
| Valparaiso-Niceville, Fla. | WNSM | 1340 | |
| Van Buren, Ark. | KFDF | 1580 | |
| Van Cleve, Ky. | WMTC | 730 | |
| Van Wert, Ohio | WERT | 1220 | |
| Vanceburg, Ky. | WKKS | 1570 | |
| Vancouver, B.C. | CBU | 690 | |
| | CFUN | 1410 | |
| | CHQM | 1320 | |
| | CJOR | 600 | |
| | CKWX | 1130 | M |

| Location | C.L. | Kc. | N.A. |
|---|---|---|---|
| Vancouver, Wash. | KKEY | 1150 | |
| | KVAN | 1480 | |
| | KISN | 910 | |
| Venice, Fla. | WAMR | 1320 | |
| Ventura, Calif. | KVEN | 1450 | M |
| | KUDU | 1590 | |
| Verdun, Que. | CKVL | 850 | |
| Vermillion, S.Dak. | KUSD | 690 | |
| Vernal, Utah | KVEL | 1250 | |
| Vernon, B.C. | CJIB | 940 | |
| Vernon, Tex. | KVWC | 1490 | |
| Vero Beach, Fla. | WAXE | 1370 | |
| | WTTB | 1490 | A |
| Vicksburg, Miss. | WQBC | 1420 | M |
| | WVIM | 1490 | |
| Victoria, B.C. | CJVI | 900 | |
| | CFAX | 810 | |
| | CKDA | 1220 | |
| Victoria, Tex. | KNAL | 1410 | |
| | KVIC | 1340 | M |
| Victoriaville, Que. | CFDA | 1380 | |
| Victorville, Calif. | KCIN | 1590 | |
| Vidalia, Ga. | WVOP | 970 | |
| Vieques, P.R. | WIVV | 1370 | |
| Ville Marie, Que. | CKVM | 710 | |
| Ville Platte, La. | KVPI | 1050 | |
| Ville St. Georges, Que. | CKRB | 1460 | |
| Vincennes, Ind. | WAOV | 1450 | M |
| Vineland, N.J. | WWBZ | 1360 | |
| | WDVL | 1270 | |
| Vinita, Okla. | KVIN | 1470 | |
| Vinton, Va. | WKBA | 1550 | |
| Virginia, Minn. | WHLB | 1400 | N |
| Virginia Bch., Va. | WBOF | 1550 | |
| Virouqua, Wis. | WISV | 1360 | |
| Visalia, Calif. | KONG | 1400 | |
| Vivian, La. | KLVI | 1600 | |
| Waco, Tex. | WACO | 1580 | A |
| | KWTX | 1230 | M |
| Wadena, Minn. | KWAD | 920 | M |
| Wadesboro, N.C. | WADE | 1210 | |
| Wailuku, Hawaii | KMVI | 550 | N |
| Waipahu, Hawaii | KAHU | 920 | |
| Walhalla, S.C. | WGOG | 1460 | |
| Wallace, Idaho | KWAL | 620 | M |
| Wallace, N.C. | WLSE | 1400 | |
| Walla Walla, Wash. | KHIT | 1320 | |
| | KUJ | 1420 | M |
| | KTEL | 1490 | A |
| Walnut Ridge, Ark. | KRLW | 1320 | |
| Walsenburg, Colo. | KFLJ | 1380 | |
| Walterboro, S.C. | WALD | 1220 | A |
| Waltham, Mass. | WCRB | 1330 | |
| Walton, N.Y. | WDLA | 1270 | |
| Ward Ridge, Fla. | WJOE | 1570 | |
| Ware, Mass. | WARE | 1250 | M |
| Warner Robbins, Ga. | WRPB | 1350 | A |
| Warren, Ark. | KWRF | 860 | |
| Warren, Ohio | WHHH | 1440 | |
| Warren, Pa. | WNAE | 1310 | |
| Warrensburg, Mo. | KOKO | 1450 | |
| Warrenton, Mo. | KWRE | 730 | |
| Warrenton, Va. | WEER | 1570 | |
| | WKCW | 1420 | |
| Warsaw, Ind. | WRSW | 1480 | |
| Warsaw, Va. | WNNT | 690 | |
| Warwick-E.Greenwich, R.I. | WYNG | 1590 | |
| Wasco, Calif. | KWSO | 1050 | |
| Washington, D.C. | WGMS | 570 | |
| | WMAL | 630 | A |
| | WOL | 1450 | M |
| | WOOK | 1340 | |
| | WWDC | 1260 | |
| | WRC | 980 | N |
| | WTOP | 1500 | C |
| Washington, Ga. | WKLE | 1370 | |
| Washington, Ind. | WAMW | 1580 | |
| Washington, Iowa | KCII | 1380 | |
| Washington, N.J. | WCRV | 1580 | |
| | WITN | 930 | A |
| Washington, N.C. | WEEW | 1320 | |
| Washington, Pa. | WJPA | 1450 | M |
| Washington Court House, Ohio | WCHO | 1250 | |
| Waterbury, Conn. | WATR | 1320 | A |
| | WBRY | 1590 | C |
| | WWCO | 1240 | M |
| Waterbury, Vt. | WDEV | 550 | M |
| Waterloo, Iowa | KXEL | 1540 | A |
| | KNWS | 1090 | |
| | KWWL | 1330 | M |
| Watertown, N.Y. | WATN | 1240 | |
| | WOTT | 1410 | |
| | WWNY | 790 | C |
| Watertown, S.Dak. | KSDR | 1480 | |
| | KWAT | 950 | M |
| Watertown, Wis. | WTTN | 1580 | |
| Waterville, Me. | WTVL | 1490 | A |
| Watseka, Ill. | WGFA | 1360 | |
| Watsonville, Calif. | KOMY | 1340 | |
| Wauchula, Fla. | WAUC | 1310 | |
| Waukegan, Ill. | WKRS | 1220 | |
| Waukesha, Wis. | WAUX | 1510 | |
| Waupaca, Wis. | WDUX | 800 | A |
| Wausau, Wis. | WRIG | 1400 | N |
| | WSAU | 550 | A |
| | WHVF | 1230 | |
| Waverly, Iowa | KWVY | 1470 | |
| Waverly, Ohio | WPKO | 1380 | |
| Waxahachie, Tex. | KBEC | 1390 | |
| Waycross, Ga. | WACL | 570 | |
| | WAYX | 1230 | M |
| Waynesboro, Ga. | WBRO | 1310 | |
| Waynesboro, Miss. | WABO | 990 | |
| Waynesboro, Pa. | WAYZ | 1380 | |
| Waynesboro, Va. | WAYB | 1490 | M |
| | WRWV | 970 | |
| Waynesburg, Pa. | WANB | 1580 | |
| Waynesville, Mo. | KJPW | 1390 | |
| Waynesville, N.C. | WHCC | 1400 | |
| Weatherford, Tex. | KZEE | 1220 | |
| Webster City, Iowa | KJFJ | 1570 | |
| Weed, Calif. | KDAD | 800 | |
| Weirton, W.Va. | WEIR | 1430 | N |
| Weiser, Idaho | KWEI | 1260 | |
| Welch, W.Va. | WELC | 1150 | |
| | WOVE | 1340 | M |
| Weldon, N.C. | WCNF | 1400 | |
| Welland, Ontario | CHOW | 1470 | |
| Wellsboro, Pa. | WNBT | 1490 | M |
| Wellston, Ohio | WKOV | 1330 | |
| Wellsville, N.Y. | WLSV | 790 | |
| Wenatchee, Wash. | KPQ | 560 | A |
| | KUEN | 900 | |
| | KMEL | 1340 | M |
| Wendell-Zebulon, N.C. | WETC | 540 | |
| Weslaco, Tex. | KRGV | 1290 | N |
| West Allis, Wis. | WAWA | 1590 | |
| W. Bend, Wis. | WBKV | 1470 | |
| Westbrook, Me. | WJAB | 1440 | |
| West Covina, Calif. | KGRB | 900 | |
| W. Frankfort, Ill. | WFRX | 1300 | |
| West Jefferson, N.C. | WKSK | 1600 | |
| W. Memphis, Ark. | KSUD | 730 | |
| W. Monroe, La. | KUZN | 1310 | |
| W. Palm Beach, Fla. | WEAT | 850 | M |
| | WJNO | 1230 | C |
| | WIRK | 1290 | M |
| West Plains, Mo. | KWPM | 1450 | |
| West Point, Ga. | WBMK | 1310 | |
| West Point, Miss. | WROB | 1450 | M |
| Westport, Conn. | WMMM | 1260 | M |
| W. Springfield, Mass. | WTXL | 1490 | A |
| W. Yarmouth, Mass. | WOCB | 1240 | M |
| Westerly, R.I. | WERI | 1230 | M |
| Westfield, Mass. | WDEW | 1570 | |
| Westminster, Md. | WTTR | 1470 | |
| Weston, W.Va. | WHAW | 980 | M |
| W. Warwick, R.I. | WWRI | 1450 | |
| Wetumpka, Ala. | WETU | 1250 | |
| Wewoka-Seminole, Okla. | KWSH | 1260 | A |
| Weyburn, Sask. | CFSL | 1340 | |
| Wharton, Tex. | KANI | 1500 | |
| Wheatland, Wyo. | KYCN | 1340 | |
| Wheaton, Md. | WDON | 1540 | |
| Wheeling, W.Va. | WHLL | 1600 | |
| | WJBT | 1470 | |
| | WKWK | 1400 | A |
| | WWVA | 1170 | C |
| White Castle, La. | KEVL | 1590 | |
| White Plains, N.Y. | WFAS | 1230 | |
| White River Junc., Vt. | WWRJ | 910 | |
| Whitehall, Mich. | WCBP | 1490 | |
| Whitehorse, Y.T. | CFWH | 1240 | |
| Whitesburg, Ky. | WTCW | 920 | |
| Whiteville, N.C. | WENC | 1220 | |
| Wichita, Kans. | KAKE | 1240 | M |
| | KLEO | 1480 | M |
| | KIRL | 1070 | N |
| | KFH | 1330 | C |
| | KSIR | 900 | |
| | KWBB | 1410 | |
| Wichita Falls, Tex. | KNIN | 990 | M |
| | KTRN | 1290 | |
| | KWFT | 620 | C |
| Wickenburg, Ariz. | KAKA | 1250 | |
| Wickford, R.I. | WKFD | 1370 | |
| Wildwood, N.J. | WCMC | 1230 | M |
| Wilkes-Barre, Pa. | WBAX | 1240 | M |
| | WBRE | 1340 | N |
| | WILK | 980 | A |
| Willcox, Ariz. | KWCX | 1250 | |
| Williamsburg, Ky. | WEZJ | 1440 | |
| Williamsburg, Va. | WBCI | 740 | |
| Williams Lake, B.C. | CKCQ-1 | 1240 | |
| Williamson, W.Va. | WBTH | 1400 | M |
| Williamsport, Pa. | WLYC | 1050 | |
| | WRAK | 1400 | N |
| | WWPA | 1340 | C |
| Williamston, N.C. | WIAM | 900 | |
| Willimantic, Conn. | WILI | 1400 | M |
| Williston, N.D. | KEYZ | 1360 | |
| Willmar, Minn. | KWLM | 1340 | A |
| Willow Springs, Mo. | KUKU | 1330 | |
| Willows, Calif. | KIQS | 1560 | |
| Wilmington, Del. | WAMS | 1380 | M |
| | WDEL | 1150 | N |
| | WILM | 1450 | A |
| | WTUX | 1290 | |
| Wilmington, N.C. | WMFD | 630 | A |
| | WKLM | 980 | |
| | WGNI | 1340 | M |
| Wilson, N.C. | WGTM | 590 | C |
| | WLLY | 1350 | |
| | WVOT | 1420 | M |
| Winchester, Ky. | WWKY | 1380 | |
| Winchester, Tenn. | WCDT | 1340 | |
| Winchester, Va. | WINC | 1400 | A |
| | WHPL | 610 | |
| Windemere, Fla. | WXIV | 1480 | |
| Winder, Ga. | WIMO | 1300 | |
| Windom, Minn. | KDOM | 1580 | |
| Windsor, Conn. | WSOR | 1480 | |
| Windsor, N.S. | CFAB | 1450 | |
| Windsor, Ont. | CBE | 1550 | |
| | CKLW | 800 | M |
| Wingham, Ont. | CKNX | 920 | |
| Winnemucca, Nev. | KWNA | 1400 | |
| Winnfield, La. | KVCL | 1270 | |
| Winner, S.Dak. | KWYR | 1260 | |
| Winnipeg, Man. | CBW | 990 | |
| | CKRC | 630 | |
| | CKY | 580 | |
| | CJOB | 680 | |
| Winnsboro, La. | KMAR | 1570 | |
| Winnsboro, S.C. | WCKM | 1250 | |
| | WRBI | 980 | |
| Winona, Minn. | KWNO | 1230 | A |
| | KAGE | 1380 | |
| Winona, Miss. | WONA | 1570 | |
| Winslow, Ariz. | KVNC | 1010 | A |
| Winston-Salem, N.C. | WAAA | 980 | |
| | WAIR | 1340 | |
| | WPEG | 1550 | |
| | WSJS | 600 | N |
| | WTOB | 1380 | M-C |
| Winter Garden, Fla. | WOKB | 1600 | |
| Winter Haven, Fla. | WSIR | 1490 | M |
| | WINT | 1360 | |
| Winter Park, Fla. | WABR | 1440 | M |
| Wisconsin Rapids, Wis. | WFHR | 1320 | M |
| | WRNE | 1220 | |
| Wolf Pt., Mont. | KVCK | 1450 | M |
| Wood River, Ill. | WBBY | 590 | M |
| Woodside, N.Y. | WWRL | 1600 | |
| Woodstock, N.B. | CJCJ | 920 | |
| Woodstock, Ont. | CKOX | 1340 | |
| Woodward, Okla. | KSIW | 1450 | |
| Woonsocket, R.I. | WNRI | 1380 | |
| | WWON | 1240 | |
| Wooster, Ohio | WWST | 960 | |
| Worcester, Mass. | WAAB | 1440 | M-N-A |
| | WNEB | 1230 | |
| | WORC | 1310 | |
| | WTAG | 580 | C |
| Worland, Wyo. | KWOR | 1340 | M |
| Worthington, Minn. | KWOA | 730 | |
| Worthington, Ohio | WRFD | 880 | |
| Wynne, Ark. | KWYN | 1400 | |
| Wytheville, Va. | WYVE | 1280 | |
| Yakima, Wash. | KIT | 1280 | |
| | KIMA | 1460 | C |
| | KUTI | 980 | |
| | KYAK | 1390 | M |
| Yankton, S.D. | KYNT | 1450 | |
| | WNAX | 570 | C |
| Yarmouth, N.S. | CJLS | 1340 | |
| Yauco, P.R. | WKFE | 1550 | |
| Yazoo City, Miss. | WAZF | 1230 | |
| Yellowknife, N.W.T. | CFYK | 1340 | |
| York, Nebr. | KAWL | 1370 | |
| York, Pa. | WNOW | 1250 | M |
| | WORK | 1350 | N |
| | WSBA | 910 | A |
| York, S.C. | WYCL | 1580 | |
| Yorkton, Sask. | CJGX | 940 | |
| Youngstown, Ohio | WBBW | 1240 | M |
| | WFMJ | 1390 | N |
| | WKBN | 570 | C |
| Yreka, Calif. | KSYC | 1490 | |
| Yuba City, Calif. | KUBA | 1600 | |
| | KAGR | 1450 | |
| Yuma, Ariz. | KOFA | 1240 | |
| | KBLU | 1320 | |
| | KVOY | 1400 | A |
| | KYUM | 560 | N |
| Zanesville, Ohio | WHIZ | 1240 | N |
| Zarephath, N.J. | WAWZ | 1380 | |
| Zephyr Hills, Fla. | WZRH | 1400 | |

# U. S. AM Stations by Call Letters

| C.L. | Location | Kc. |
|---|---|---|
| KAAA | Kingman, Ariz. | 1230 |
| KAAB | Hot Springs, Ark. | 1340 |
| KABC | Los Angeles, Calif. | 790 |
| KABL | Oakland, Calif. | 960 |
| KABQ | Albuquerque, N.M. | 1350 |
| KABR | Aberdeen, S.Dak. | 1420 |
| KABY | Albany, Oreg. | 990 |
| KACE | Riverside, Calif. | 1570 |
| KACI | The Dalles, Oreg. | 1300 |
| KACT | Andrews, Tex. | 1360 |
| KACY | Port Hueneme, Calif. | 1520 |
| KADA | Ada, Okla. | 1230 |
| KADL | Pine Bluff, Ark. | 1270 |
| KADO | Marshall, Tex. | 1410 |
| KADY | St. Charles, Mo. | 1460 |
| KAFP | Petaluma, Calif. | 1490 |
| KAFY | Bakersfield, Calif. | 550 |
| KAGE | Winona, Minn. | 1380 |
| KAGH | Crossett, Ark. | 800 |
| KAGI | Grants Pass, Oreg. | 930 |
| KAGO | Klamath Falls, Oreg. | 1150 |
| KAGR | Yuba City, Calif. | 1450 |
| KAGT | Anacortes, Wash. | 1340 |
| KAHI | Auburn, Calif. | 950 |
| KAHU | Wainahu, Hawaii | 920 |
| KAHR | Redding, Calif. | 1330 |
| KAIM | Kaimuki, Hawaii | 870 |
| KAIR | Tucson, Ariz. | 1490 |
| KAJI | Little Rock, Ark. | 1250 |
| KAJO | Grants Pass, Oreg. | 1270 |
| KAKA | Wickenburg, Ariz. | 1250 |
| KAKC | Tulsa, Okla. | 970 |
| KAKE | Wichita, Kan. | 1240 |
| KALB | Alexandria, La. | 580 |
| KALE | Richland, Wash. | 960 |
| KALG | Alamogordo, N.Mex. | 1230 |
| KALI | Pasadena, Calif. | 1430 |
| KALL | Salt Lake City, Utah | 910 |
| KALM | Thayer, Mo. | 1290 |
| KALN | Iola, Kan. | 1370 |
| KALT | Atlanta, Tex. | 900 |
| KALV | Alva, Okla. | 1430 |
| KAMD | Camden, Ark. | 910 |
| KAML | Kenedy, Tex. | 990 |
| KAMO | Rogers, Ark. | 1390 |
| KAMP | El Centro, Calif. | 1430 |
| KAMY | McCamey, Tex. | 1450 |
| KANA | Anaconda, Mont. | 1230 |
| KANB | Shreveport, La. | 1300 |
| KAND | Corsicana, Tex. | 1340 |
| KANE | New Iberia, La. | 1240 |
| KANI | Wharton, Tex. | 1500 |
| KANN | Ogden, Utah | 1250 |
| KANO | Anoka, Minn. | 1470 |
| KANS | Independence, Mo. | 1510 |
| KAOH | Duluth, Minn. | 1390 |
| KAOK | Lake Charles, La. | 1400 |
| KAOL | Carrollton, Mo. | 1430 |
| KAPA | Raymond, Wash. | 1340 |
| KAPB | Marksville, La. | 1370 |
| KAPE | San Antonio, Tex. | 1480 |
| KAPI | Pueblo, Colo. | 690 |
| KAPR | Douglas, Ariz. | 930 |
| KAPT | Salem, Ore. | 1220 |
| KAPY | Port Angeles, Wash. | 1290 |
| KARA | Albuquerque, N.M. | 1310 |
| KARE | Atchison, Kan. | 1470 |
| KARI | Blaine, Wash. | 550 |
| KARK | Little Rock, Ark. | 920 |
| KARM | Fresno, Calif. | 1430 |
| KARR | Great Falls, Mont. | 1400 |
| KARS | Belen, N.M. | 860 |
| KART | Jerome, Idaho | 1400 |
| KARY | Prosser, Wash. | 1310 |
| KASE | Austin, Tex. | 970 |
| KASH | Eugene, Ore. | 1600 |
| KASI | Ames, Iowa | 1430 |
| KASK | Ontario, Calif. | 1510 |
| KASL | Newcastle, Wyo. | 1240 |
| KASM | Albany, Minn. | 1150 |
| KASO | Minden, La. | 1240 |
| KAST | Astoria, Ore. | 1370 |
| KASY | Auburn, Wash. | 1220 |
| KATE | Albert Lea, Minn. | 1450 |
| KATI | Casper, Wyo. | 1400 |
| KATL | Miles City, Mont. | 1340 |
| KATN | Boise, Idaho | 1010 |
| KATO | Safford, Ariz. | 1230 |
| KATQ | Texarkana, Tex. | 940 |
| KATR | Eugene, Ore. | 1320 |
| KATY | San Luis Obispo, Cal. | 1340 |
| KATZ | St. Louis, Mo. | 1600 |
| KAUS | Austin, Minn. | 1480 |
| KAVE | Carlsbad, N.Mex. | 1240 |
| KAVI | Rocky Ford, Colo. | 1320 |
| KAVL | Lancaster, Calif. | 610 |
| KAVR | Apple Valley, Calif. | 960 |
| KAWA | Marlin, Tex. | 1010 |
| KAWL | York, Neb. | 1370 |
| KAWT | Douglas, Ariz. | 1450 |
| KAYE | Puyallup, Wash. | 1450 |
| KAYG | Lakewood, Wash. | 1480 |
| KAYL | Storm Lake, Iowa | 990 |
| KAYO | Seattle, Wash. | 1150 |
| KAYS | Hays, Kans. | 1400 |
| KAYT | Rupert, Idaho | 970 |
| KBAL | San Saba, Tex. | 1410 |
| KBAM | Longview, Wash. | 1270 |
| KBAN | Bowie, Tex. | 1410 |
| KBAR | Burley, Idaho | 1230 |
| KBBA | Benton, Ark. | 690 |
| KBBB | Borger, Tex. | 1600 |
| KBBC | Centerville, Utah | 1600 |
| KBBR | North Bend, Oreg. | 1340 |
| KBBS | Buffalo, Wyo. | 1450 |
| KBCH | Oceanlake, Oreg. | 1380 |
| KBCL | Shreveport, La. | 1220 |
| KBEA | Mission, Kans. | 1480 |
| KBEC | Waxahachie, Tex. | 1390 |
| KBEE | Modesto, Calif. | 970 |
| KBEK | Elk City, Okla. | 1240 |
| KBEL | Idabel, Okla. | 1240 |
| KBEN | Carrizo Sprgs., Tex. | 1450 |
| KBER | San Antonio, Tex. | 1150 |
| KBET | Reno, Nev. | 1340 |
| KBEV | Portland, Oreg. | 1010 |
| KBFS | Belle Fourche, S.Dak. | 1450 |
| KBGN | Caldwell, Idaho | 910 |
| KBHC | Nashville, Ark. | 1260 |
| KBHM | Branson, Mo. | 1220 |
| KBHS | Hot Springs, Ark. | 590 |
| KBIF | Fresno, Calif. | 900 |
| KBIG | Avalon, Calif. | 740 |

| C.L. | Location | Kc. |
|---|---|---|
| KBIM | Roswell, N.Mex. | 910 |
| KBIS | Bakersfield, Calif. | 970 |
| KBIX | Muskogee, Okla. | 1490 |
| KBIZ | Ottumwa, Iowa | 1240 |
| KBJT | Fordyce, Ark. | 1570 |
| KBKR | Baker, Oreg. | 1490 |
| KBKW | Aberdeen, Wash. | 1450 |
| KBLA | Burbank, Calif. | 1490 |
| KBLF | Red Bluff, Calif. | 1490 |
| KBLI | Blackfoot, Idaho | 690 |
| KBLR | Bolivar, Mo. | 1550 |
| KBLT | Big Lake, Tex. | 1290 |
| KBLU | Yuma, Ariz. | 1320 |
| KBLY | Gold Beach, Oreg. | 1220 |
| KBMI | Henderson, Nev. | 1400 |
| KBMN | Bozeman, Mont. | 1230 |
| KBMO | Benson, Minn. | 1290 |
| KBMW | Breckinrdg., Minn. | 1450 |
| KBMX | Coalinga, Calif. | 1470 |
| KBMY | Billings, Mont. | 1240 |
| KBND | Bend, Oreg. | 1110 |
| KBOA | Kennett, Mo. | 830 |
| KBOE | Oskaloosa, Iowa | 740 |
| KBOI | Boise, Idaho | 950 |
| KBOK | Malvern, Ark. | 1310 |
| KBOL | Boulder, Colo. | 1490 |
| KBOM | Bismark-Mandan, N. Dak. | 1270 |
| KBON | Omaha, Nebr. | 1490 |
| KBOP | Pleasanton, Tex. | 1380 |
| KBOR | Brownsville, Tex. | 1600 |
| KBOW | Butte, Mont. | 1490 |
| KBOX | Dallas, Tex. | 1480 |
| KBOY | Medford, Oreg. | 730 |
| KBPS | Portland, Oreg. | 1450 |
| KBRC | Mt. Vernon, Wash. | 1430 |
| KBRI | Brinkley, Ark. | 1570 |
| KBRK | Brookings, S.Dak. | 1430 |
| KBRL | McCook, Nebr. | 1300 |
| KBRN | Brighton, Colo. | 800 |
| KBRO | Bremerton, Wash. | 1490 |
| KBRR | Leadville, Colo. | 1230 |
| KBRS | Springdale, Ark. | 1340 |
| KBRV | Soda Sprgs., Ida. | 540 |
| KBRX | O'Neill, Nebr. | 1350 |
| KBRZ | Freeport, Texas | 1460 |
| KBSF | Springhill, La. | 1460 |
| KBST | Big Spring, Tex. | 1490 |
| KBTA | Batesville, Ark. | 1340 |
| KBTM | Jonesboro, Ark. | 1230 |
| KBTN | Neosho, Mo. | 1420 |
| KBTO | El Dorado, Kans. | 1360 |
| KBTR | Denver, Colo. | 710 |
| KBUC | Corona, Calif. | 1370 |
| KBUD | Athens, Tex. | 1410 |
| KBUH | Brigham City, Utah | 800 |
| KBUN | Bemidji, Minn. | 1450 |
| KBUR | Burlington, Iowa | 1490 |
| KBUS | Mexia, Tex. | 1590 |
| KBUY | Amarillo, Tex. | 1010 |
| KBUZ | Mesa, Ariz. | 1310 |
| KBVM | Lancaster, Calif. | 1380 |
| KBVU | Bellevue, Wash. | 1540 |
| KBWD | Brownwood, Tex. | 1380 |
| KBYE | Okla. City, Okla. | 890 |
| KBYG | Big Spring, Tex. | 1400 |
| KBYP | Shamrock, Tex. | 1580 |
| KBYR | Anchorage, Alaska | 1270 |
| KBZY | Salem, Oreg. | 1490 |
| KBZZ | LaJunta, Colo. | 1400 |
| KCAC | Phoenix, Ariz. | 1010 |
| KCAD | Abilene, Tex. | 1560 |
| KCAL | Redlands, Calif. | 1410 |
| KCAP | Helena, Mont. | 1340 |
| KCAR | Clarksville, Tex. | 1350 |
| KCAS | Slaton, Tex. | 1050 |
| KCBC | Des Moines, Iowa | 1390 |
| KCBD | Lubbock, Tex. | 1590 |
| KCBQ | San Diego, Calif. | 1170 |
| KCBS | San Fran., Calif. | 740 |
| KCCL | Paris, Ark. | 1460 |
| KCCO | Lawton, Okla. | 1050 |
| KCCR | Pierre, S.Dak. | 1590 |
| KCCT | Corpus Christi, Tex. | 1150 |
| KCDI | Kirkland, Wash | |
| KCEE | Tucson, Ariz. | 790 |
| KCEY | Tunlock, Calif. | 1390 |
| KCFA | Spokane, Wash. | 1330 |
| KCFH | Cuero, Tex. | 1600 |
| KCFI | Cedar Falls, Iowa | 1250 |
| KCGM | Columbia, Mo. | 1580 |
| KCHA | Charles City, Iowa | 1580 |
| KCHE | Cherokee, Iowa | 1440 |
| KCHI | Chillicothe, Mo. | 1010 |
| KCHJ | Delano, Calif. | 1010 |
| KCHR | Charleston, Mo. | 1350 |
| KCHS | Truth or Consequences, New Mexico | 1400 |
| KCHV | Coachella, Calif. | 970 |
| KCHY | Cheyenne, Wyo. | 1590 |
| KCID | Caldwell, Idaho | 1490 |
| KCII | Washington, Iowa | 1380 |
| KCIJ | Shreveport, La. | 1050 |
| KCIL | Houma, La. | 1490 |
| KCIM | Carroll, Iowa | 1380 |
| KCIN | Victorville, Calif. | 1590 |
| KCJB | Minot, N.Dak. | 910 |
| KCJH | San Luis Obispo, Cal. | 1280 |
| KCKC | San Bernardino, Cal. | 1350 |
| KCKG | Sonora, Tex | 1240 |
| KCKN | Kansas City, Kans. | 1340 |
| KCKY | Coolidge, Ariz. | 1150 |
| KCLA | Pine Bluff, Ark. | 1400 |
| KCLE | Cleburne, Tex. | 1120 |
| KCLF | Clifton, Ariz. | 1400 |
| KCLN | Clinton, Iowa | 1390 |
| KCLO | Leavenworth, Kans. | 1410 |
| KCLS | Flagstaff, Ariz. | 600 |
| KCLU | Rolla, Mo. | 1590 |
| KCLV | Clovis, N.Mex. | 1240 |
| KCLW | Hamilton, Tex. | 900 |
| KCLX | Colfax, Wash. | 1450 |
| KCMC | Texarkana, Tex. | 1230 |
| KCMJ | Palm Sprgs., Calif. | 1010 |
| KCMO | Kansas City, Mo. | 810 |
| KCMS | Manitou Sprgs., Colo. | 1490 |
| KCNI | Broken Bow, Nebr. | 1280 |
| KCNO | Alturas, Calif. | 570 |
| KCNY | San Marcos, Tex. | 1470 |
| KCOB | Newton, Iowa | 1280 |
| KCOG | Centerville, Iowa | 1400 |
| KCOH | Houston, Tex. | 1430 |
| KCOK | Tulare, Calif. | 1270 |
| KCOL | Ft. Collins, Colo. | 1410 |
| KCON | Conway, Ark. | 1230 |
| KCOR | San Antonio, Tex. | 1350 |
| KCOW | Alliance, Nebr. | 1400 |
| KCOY | Santa Maria, Calif. | 1400 |
| KCPX | Salt Lake City, Utah | 1320 |
| KCRA | Sacramento, Calif. | 1320 |
| KCRB | Chanute, Kans. | 1460 |
| KCRC | Enid, Okla. | 1390 |
| KCRG | Cedar Rapids, Iowa | 1600 |
| KCRM | Crane, Tex. | 1380 |
| KCRS | Midland, Tex. | 550 |
| KCRT | Trinidad, Colo. | 1240 |
| KCRV | Caruthersville, Mo. | 1370 |
| KCSJ | Pueblo, Colo. | 590 |
| KCSR | Chadron, Nebr. | 1450 |
| KCTA | Corpus Christi, Tex. | 1030 |
| KCTI | Gonzales, Tex. | 1450 |
| KCTX | Childress, Tex. | 1510 |
| KCUB | Tucson, Ariz. | 1290 |
| KCUE | Red Wing, Minn. | 1250 |
| KCUL | Fort Worth, Tex. | 1540 |
| KCVL | Colville, Wash. | 1270 |
| KCVR | Lodi, Calif. | 1570 |
| KCYL | Lampasas, Tex. | 1450 |
| KDAB | Arvada, Colo. | 1550 |
| KDAC | Ft. Bragg, Calif. | 1230 |
| KDAD | Weed, Calif. | 800 |
| KDAK | Carrington, N.D. | 1600 |
| KDAL | Duluth, Minn. | 610 |
| KDAN | Eureka, Calif. | 790 |
| KDAV | Lubbock, Tex. | 580 |
| KDAY | Santa Monica, Calif. | 1580 |
| KDB | Santa Barbara, Calif. | 1490 |
| KDBC | Mansfield, La. | 1360 |
| KDBM | Dillon, Mont. | 800 |
| KDBS | Alexandria, La. | 1410 |
| KDDD | Dumas, Tex. | 800 |
| KDEC | Decorah, Iowa | 1240 |
| KDEF | Albuquerque, N.Mex. | 1150 |
| KDEN | Denver, Colo. | 1340 |
| KDEO | El Cajon, Calif. | 910 |
| KDES | Palm Sprgs., Calif. | 920 |
| KDET | Center, Tex. | 930 |
| KDEX | Dexter, Mo. | 1590 |
| KDGO | Durango, Colo. | 1240 |
| KDHI | Twenty-nine Palms, California | 1250 |
| KDHL | Faribault, Minn. | 920 |
| KDIA | Oakland, Calif. | 1310 |
| KDIO | Ortonville, Minn. | 1350 |
| KDIX | Dickinson, N.Dak. | 1230 |
| KDJI | Holbrook, Ariz. | 1270 |
| KDKA | Pittsburgh, Pa. | 1020 |
| KDKD | Clinton, Mo. | 1280 |
| KDLA | DeRidder, La. | 1010 |
| KDLK | Del Rio, Tex. | 1230 |
| KDLM | Detroit Lakes, Minn. | 1340 |
| KDLR | Devils Lake, N.Dak. | 1240 |
| KDLS | Perry, Iowa | 1310 |
| KDMA | Montevideo, Minn. | 1450 |
| KDMO | Carthage, Mo. | 1490 |
| KDMS | El Dorado, Ark. | 1290 |
| KDNT | Denton, Tex. | 1440 |
| KDOK | Tyler, Tex. | 1330 |
| KDOL | Mojave, Calif. | 1340 |
| KDOM | Windom, Minn. | 1580 |
| KDON | Salinas, Calif. | 1460 |
| KDOT | Reno, Nev. | 1230 |
| KDOV | Medford, Oreg. | 1300 |
| KDQN | DeQueen, Ark. | 1390 |
| KDRO | Sedalia, Mo. | 1490 |
| KDRS | Paragould, Ark. | 1490 |
| KDSJ | Deadwood, S.Dak. | 980 |
| KDSN | Denison, Iowa | 1580 |
| KDSX | Denison, Tex. | 950 |
| KDTA | Delta, Colo. | 1400 |
| KDTH | Dubuque, Iowa | 1370 |
| KDUB | Lubbock, Tex. | 1340 |
| KDUZ | Hutchinson, Minn. | 1260 |
| KDWB | St. Paul, Minn. | 630 |
| KDWT | Stamford, Tex. | 1200 |
| KDXE | No. Little Rock, Ark. | 1380 |
| KDXU | St. George, Utah | 1450 |
| KDYL | Tooele, Utah | 990 |
| KDZA | Pueblo, Colo. | 1230 |
| KEAN | Brownwood, Tex. | 1240 |
| KEAP | Fresno, Calif. | 980 |
| KEBE | Jacksonville, Tex. | 1400 |
| KECK | Odessa, Tex. | 920 |
| KEDD | Dodge City, Kans. | 1550 |
| KEDO | Longview, Wash. | 1400 |
| KEED | Springfield, Oreg. | 1050 |
| KEEE | Nacogdoches, Tex. | 1230 |
| KEEL | Shreveport, La. | 710 |
| KEEN | San Jose, Calif. | 1370 |
| KEEP | Twin Falls, Idaho | 1450 |
| KEES | Gladewater, Tex. | 1430 |
| KEKO | Kailua, Hawaii | 1130 |
| KELA | Centralia, Wash. | 1470 |
| KELD | El Dorado, Ark. | 1400 |
| KELI | Tulsa, Okla. | 1430 |
| KELK | Elko, Nev. | 1240 |
| KELO | Sioux Falls, S.Dak. | 1320 |
| KELP | El Paso, Tex. | 920 |
| KELR | El Reno, Okla. | 1460 |
| KELY | Ely, Nev. | 1230 |
| KENA | Mena, Ark. | 1450 |
| KENE | Toppenish, Wash. | 1490 |
| KENI | Anchorage, Alaska | 550 |
| KENL | Arcata, Calif. | 1340 |
| KENM | Portales, N.Mex. | 1450 |
| KENN | Farmington, N.M. | 1390 |
| KENO | Las Vegas, Nev. | 1460 |
| KENS | San Antonio, Tex. | 680 |
| KENY | Bellingham-Ferndale, Wash. | 930 |
| KEOK | Payette, Idaho | 1450 |
| KEOS | Flagstaff, Ariz. | 1290 |
| KEPR | Kennewick, Wash. | 610 |
| KEPS | Eagle Pass, Tex. | 1270 |
| KERB | Kermit, Tex. | 600 |
| KERC | Eastland, Tex. | 1590 |
| KERG | Eugene, Oreg. | 1280 |
| KERN | Bakersfield, Calif. | 1410 |
| KERV | Kerrville, Tex. | 1230 |
| KESM | Eldorado Springs, Mo. | 1580 |
| KEST | Boise, Idaho | 790 |
| KETO | Seattle, Wash. | 1590 |
| KETX | Livingston, Tex. | 1440 |
| KEUN | Eunice, La. | 1490 |
| KEVE | Minneapolis, Minn. | 1440 |
| KEVL | White Castle, La. | 1590 |
| KEVT | Tucson, Ariz. | 690 |
| KEWB | Oakland, Calif. | 910 |
| KEWI | Topeka, Kans. | 1440 |
| KEX | Portland, Oreg. | 1190 |
| KEXO | Grand Junc., Colo. | 1230 |
| KEYD | Oakes, N.Dak. | 1220 |
| KEYE | Perryton, Tex. | 1400 |
| KEYJ | Jamestown, N.Dak. | 1400 |
| KEYL | Long Prairie, Minn. | 1400 |
| KEYS | Corpus Christi, Tex. | 1440 |
| KEYY | Provo, Utah | 1450 |
| KEYZ | Williston, N.Dak. | 1360 |
| KEZU | Rapid City, S.Dak. | 920 |
| KEZY | Anaheim, Calif. | 1190 |
| KFAB | Omaha, Nebr. | 1110 |
| KFAC | Los Angeles, Calif. | 1330 |
| KFAL | Fulton, Mo. | 900 |
| KFAM | St. Cloud, Minn. | 1450 |
| KFAR | Fairbanks, Alaska | 610 |
| KFAX | San Francisco, Calif. | 1100 |
| KFAY | Fayetteville, Ark. | 1250 |
| KFBB | Great Falls, Mont. | 1310 |
| KFBC | Cheyenne, Wyo. | 1240 |
| KFBK | Sacramento, Calif. | 1530 |
| KFDA | Amarillo, Tex. | 1440 |
| KFDF | Van Buren, Ark. | 1580 |
| KFDM | Beaumont, Tex. | 560 |
| KFDR | Grand Coulee, Wash. | 1360 |
| KFEL | Pueblo, Colo. | 970 |
| KFEQ | St. Joseph, Mo. | 680 |
| KFFA | Helena, Ark. | 1360 |
| KFGO | Fargo, N.D. | 790 |
| KFGQ | Boone, Iowa | 1260 |
| KFH | Wichita, Kans. | 1330 |
| KFI | Los Angeles, Calif. | 640 |
| KFIF | Tucson, Ariz. | 1550 |
| KFIV | Modesto, Calif. | 1360 |
| KFIZ | Fond du Lac, Wis. | 1450 |
| KFJB | Marshalltown, Iowa | 1230 |
| KFJM | Grand Forks, N.Dak | 1370 |
| KFJZ | Ft. Worth, Tex. | 1270 |
| KFKA | Greeley, Colo. | 1310 |
| KFKF | Bellevue, Wash. | 1330 |
| KFKU | Lawrence, Kans. | 1250 |
| KFLD | Floydada, Tex. | 900 |
| KFLJ | Walsenburg, Colo. | 1380 |
| KFLT | Mountain Home, Ida. | 1240 |
| KFLW | Klamath Falls, Oreg. | 1450 |
| KFLY | Corvallis, Oreg. | 1240 |
| KFMB | San Diego, Calif. | 540 |
| KFMJ | Tulsa, Okla. | 1050 |
| KFML | Denver, Colo. | 1390 |
| KFMO | Flat River, Mo. | 1240 |
| KFNF | Shenandoah, Iowa | 920 |
| KFNV | Ferriday, La. | 1600 |
| KFNW | Fargo, N.Dak. | 900 |
| KFOR | Lincoln, Nebr. | 1240 |
| KFOX | Long Beach, Calif. | 1280 |
| KFPW | Ft. Smith, Ark. | 1230 |
| KFQD | Anchorage, Alaska | 730 |
| KFRA | Franklin, La. | 1390 |
| KFRB | Fairbanks, Alaska | 900 |
| KFRC | San Francisco, Calif. | 610 |
| KFRD | Rosenberg, Tex. | 980 |
| KFRE | Fresno, Calif. | 940 |
| KFRM | Kansas City, Mo. | 550 |
| KFRO | Longview, Tex. | 1370 |
| KFRU | Columbia, Mo. | 1400 |
| KFSA | Ft. Smith, Ark. | 950 |
| KFSB | Joplin, Mo. | 1310 |
| KFSC | Denver, Colo. | 1220 |
| KFSD | San Diego, Calif. | 600 |
| KFSG | Los Angeles, Calif. | 1150 |
| KFST | Ft. Stockton, Tex. | 860 |
| KFTM | Ft. Morgan, Colo. | 1400 |
| KFTV | Paris, Tex. | 1250 |
| KFUN | Las Vegas, N.Mex. | 1230 |
| KFUO | St. Louis, Mo. | 850 |
| KFVS | Cape Girardeau, Mo. | 960 |
| KFWB | Los Angeles, Calif. | 980 |
| KFXD | Nampa, Idaho | 580 |
| KFXM | San Bernardino, Calif. | 590 |
| KFYN | Bonham, Tex. | 1420 |
| KFYO | Lubbock, Tex. | 790 |
| KFYR | Bismarck, N.Dak. | 550 |
| KGA | Spokane, Wash. | 1510 |
| KGAF | Gainesville, Tex. | 1580 |
| KGAK | Gallup, N.Mex. | 1330 |
| KGAL | Lebanon, Oreg. | 920 |
| KGAS | Carthage, Tex. | 1590 |
| KGAY | Salem, Oreg. | 1430 |
| KGB | San Diego, Calif. | 1360 |
| KGBC | Galveston, Tex. | 1540 |
| KGBS | Los Angeles, Calif. | 1020 |
| KGBT | Harlingen, Tex. | 1530 |
| KGBX | Springfield, Mo. | 1260 |
| KGCA | Rugby, N.D. | 1450 |
| KGCX | Sidney, Mont. | 1480 |
| KGDN | Edmonds, Wash. | 630 |
| KGEE | Bakersfield, Calif. | 1230 |
| KGEK | Sterling, Colo. | 1230 |
| KGEM | Boise, Idaho | 1140 |
| KGEN | Tulare, Calif. | 1370 |
| KGER | Long Beach, Calif. | 1390 |
| KGEZ | Kalispell, Mont. | 600 |
| KGFF | Shawnee, Okla. | 1450 |
| KGFJ | Los Angeles, Calif. | 1230 |
| KGFL | Roswell, N.Mex. | 1400 |
| KGFW | Kearney, Nebr. | 1340 |
| KGFX | Pierre, S.Dak. | 630 |
| KGGF | Coffeyville, Kans. | 690 |
| KGGG | Forest Grove, Oreg. | 1570 |
| KGGM | Albuquerque, N.Mex. | 610 |
| KGHF | Pueblo, Colo. | 1350 |
| KGHL | Billings, Mont. | 790 |
| KGHM | Brookfield, Mo. | 1470 |
| KGHS | International Falls, Minn. | 1230 |
| KGHT | Hollister, Calif. | 1520 |
| KGIL | San Fernando, Calif. | 1260 |
| KGIW | Alamosa, Colo. | 1450 |
| KGKB | Tyler, Tex. | 1490 |
| KGKL | San Angelo, Tex. | 960 |
| KGLC | Miami, Okla. | 910 |
| KGLN | Glenwood Sprgs., Colo. | 980 |
| KGLO | Mason City, Iowa | 1300 |
| KGLU | Safford, Ariz. | 1480 |
| KGMB | Honolulu, Hawaii | 590 |
| KGMC | Englewood, Colo. | 1150 |
| KGMI | Bellingham, Wash. | 790 |
| KGMO | Cape Girardeau, Mo. | 1220 |
| KGMS | Sacramento, Calif. | 1380 |
| KGMT | Fairbury, Nebr. | 1310 |
| KGNB | New Braunfels, Tex. | 1420 |
| KGNC | Amarillo, Tex. | 710 |
| KGNO | Dodge City, Kans. | 1370 |
| KGNS | Laredo, Tex. | 1390 |
| KGO | San Francisco, Calif. | 810 |
| KGON | Oregon City, Oreg. | 1520 |
| KGOS | Torrington, Wyo. | 1490 |
| KGPC | Grafton, N.Dak. | 1340 |
| KGRI | Henderson, Tex. | 1000 |
| KGRL | Bend, Oreg. | 940 |
| KGRN | Grinnell, Iowa | 1410 |
| KGRO | Gresham, Oreg. | 1230 |
| KGRT | Las Cruces, N.Mex. | 570 |
| KGST | Fresno, Calif. | 1600 |
| KGU | Honolulu, Hawaii | 760 |
| KGUC | Gunnison, Colo. | 1490 |
| KGUD | Santa Barbara, Calif. | 990 |
| KGUL | Port Lavaca, Tex. | 1560 |
| KGVL | Greenville, Tex. | 1400 |
| KGVO | Missoula, Mont. | 1290 |
| KGVW | Belgrade, Mont. | 630 |
| KGW | Portland, Oreg. | 620 |
| KGWA | Enid, Okla. | 960 |
| KGY | Olympia, Wash. | 1240 |
| KGYN | Guymon, Okla. | 1220 |
| KAHI | Honolulu, Hawaii | 1090 |
| KHAK | Cedar Rapids, Iowa | 1380 |
| KHAL | Homer, La. | 1300 |
| KHAR | Anchorage, Alaska | 590 |
| KHAS | Hastings, Nebr. | 1230 |
| KHAT | Phoenix, Ariz. | 1480 |
| KHBC | Hilo, Hawaii | 970 |
| KHBM | Monticello, Ark. | 1430 |
| KHBR | Hillsboro, Tex. | 1560 |
| KHEM | Big Springs, Tex. | 1270 |
| KHEN | Henryetta, Okla. | 1590 |
| KHEP | Phoenix, Ariz. | 1280 |
| KHER | Santa Maria, Calif. | 1600 |
| KHEY | El Paso, Tex. | 690 |
| KHFH | Fry, Ariz. | 1420 |
| KHHH | Pampa, Tex. | 1230 |
| KHIT | Walla Walla, Wash. | 1320 |
| KHJ | Los Angeles, Calif. | 930 |
| KHMO | Hannibal, Mo. | 1070 |
| KHOB | Hobbs, N.Mex. | 1390 |
| KHOE | Truckee, Calif. | 1400 |
| KHOG | Fayetteville, Ark. | 1440 |
| KHOK | Hoquiam, Wash. | 1560 |
| KHOT | Madera, Calif. | 1250 |
| KHOW | Denver, Colo. | 630 |
| KHOZ | Harrison, Ark. | 900 |
| KHQ | Spokane, Wash. | 590 |
| KHSJ | Hemet, Calif. | 1320 |
| KHSL | Chico, Calif. | 1290 |
| KHTN | Hooston, Mo. | 1250 |
| KHUB | Fremont, Nebr. | 1340 |
| KHUM | Santa Rosa, Calif. | 1580 |
| KHUZ | Borger, Tex. | 1490 |
| KHVH | Honolulu, Hawaii | 1040 |
| KIAL | Astoria, Ore. | 1230 |
| KIBE | Palo Alto, Calif. | 1220 |
| KIBH | Seward, Alaska | 1340 |
| KIBL | Beeville, Tex. | 1490 |
| KIBS | Bishop, Calif. | 1230 |
| KICD | Spencer, Iowa | 1240 |
| KICK | Springfield, Mo. | 1340 |
| KICM | Golden, Colo. | 1250 |
| KICO | Calexico, Calif. | 1490 |
| KICY | Nome, Alaska | 850 |

| C.L. | Location | Kc. |
|---|---|---|
| KID | Idaho Falls, Idaho | 590 |
| KIDD | Monterey, Calif. | 630 |
| KIDO | Boise, Idaho | 630 |
| KIEV | Glendale, Calif. | 870 |
| KIFI | Idaho Falls, Idaho | 1260 |
| KIFN | Phoenix, Ariz. | 860 |
| KIFW | Sitka, Alaska | 1230 |
| KIHN | Hugo, Okla. | 1340 |
| KIHR | Hood River, Oreg. | 1340 |
| KIJV | Huron, S.Dak. | 1340 |
| KIKI | Honolulu, Hawaii | 830 |
| KIKK | Pasadena, Tex. | 650 |
| KIKO | Miami, Ariz. | 1340 |
| KIKS | Sulphur, La. | 1310 |
| KILE | Galveston, Tex. | 1400 |
| KILO | Grand Forks, S.Dak. | 1440 |
| KILT | Houston, Tex. | 610 |
| KIMA | Yakima, Wash. | 1460 |
| KIMB | Kimball, Nebr. | 1260 |
| KIMM | Rapid City, S.D. | 1150 |
| KIML | Gillette, Wyo. | 1490 |
| KIMN | Denver, Colo. | 950 |
| KIMO | Hilo, Hawaii | 850 |
| KIMP | Mt. Pleasant, Tex. | 960 |
| KIND | Independence, Kans. | 1010 |
| KINE | Kingsville, Tex. | 1330 |
| KING | Seattle, Wash. | 1090 |
| KINS | Eureka, Calif. | 980 |
| KINT | El Paso, Tex. | 1590 |
| KINY | Juneau, Alaska | 800 |
| KIOA | Des Moines, Iowa | 940 |
| KIOT | Barstow, Calif. | 1310 |
| KIOX | Bay City, Tex. | 1270 |
| KIPA | Hilo, Hawaii | 1110 |
| KIQS | Willows, Calif. | 1560 |
| KIRL | Wichita, Kans. | 1070 |
| KIRO | Seattle, Wash. | 710 |
| KIRT | Mission, Tex. | 1580 |
| KIRX | Kirksville, Mo. | 1450 |
| KISD | Sioux Falls, S.Dak. | 1230 |
| KISN | Vancouver, Wash. | 910 |
| KIST | Santa Barbara, Calif. | 1340 |
| KIT | Yakima, Wash. | 1280 |
| KITE | San Antonio, Tex. | 930 |
| KITI | Chehalis, Wash. | 1420 |
| KITN | Olympia, Wash. | 920 |
| KIUL | Garden City, Kans. | 1240 |
| KIUN | Pecos, Tex. | 1400 |
| KIUP | Durango, Colo. | 930 |
| KIVY | Crockett, Tex. | 1290 |
| KIXL | Dallas, Tex. | 1040 |
| KIXX | Provo, Utah | 1400 |
| KIXZ | Amarillo, Tex. | 940 |
| KIZZ | El Paso, Tex. | 1150 |
| KJAM | Madison, S.Dak. | 1390 |
| KJAN | Atlantic, Iowa | 1220 |
| KJAX | Santa Rosa, Calif. | 1150 |
| KJBC | Midland, Tex. | 1150 |
| KJCF | Festus, Mo. | 1400 |
| KJCK | Junction City, Kans. | 1420 |
| KJEF | Jennings, La. | 1290 |
| KJEM | Oklahoma City, Okla. | 800 |
| KJET | Beaumont, Tex. | 1380 |
| KJFJ | Webster City, Iowa | 1570 |
| KJIM | Ft. Worth, Tex. | 870 |
| KJLT | North Platte, Nebr. | 970 |
| KJNO | Juneau, Alaska | 630 |
| KJOE | Shreveport, La. | 1480 |
| KJOY | Stockton, Calif. | 1280 |
| KJPW | Waynesville, Mo. | 1390 |
| KJR | Seattle, Wash. | 950 |
| KJRG | Newton, Kans. | 950 |
| KJSK | Columbus, Nebr. | 900 |
| KKAN | Phillipsburg, Kans. | 1490 |
| KKAR | Pomona, Calif. | 1220 |
| KKAS | Silsbee, Tex. | 1300 |
| KKCN | Ukiah, Calif. | 1300 |
| KKEY | Vancouver, Wash. | 1150 |
| KKHI | San Francisco, Calif. | 1550 |
| KKID | Pendleton, Oreg. | 1240 |
| KKIN | Aitkin, Minn. | 930 |
| KKIS | Pittsburg, Calif. | 990 |
| KKIT | Taos, N.Mex. | 1340 |
| KKJO | St. Joseph, Mo. | 1550 |
| KKOK | Lompoc, Calif. | 1410 |
| KLAC | Los Angeles, Calif. | 570 |
| KLAD | Klamath Falls, Oreg. | 960 |
| KLAK | Lakewood, Colo. | 1600 |
| KLAM | Cordova, Alaska | 1450 |
| KLAN | Lemoore, Calif. | 1320 |
| KLAS | Las Vegas, Nev. | 1230 |
| KLBM | La Grande, Oreg. | 1450 |
| KLBS | Los Banos, Calif. | 1330 |
| KLCB | Libby, Mont. | 1230 |
| KLCN | Blytheville, Ark. | 910 |
| KLCO | Poteau, Okla. | 1280 |
| KLEA | Lovington, N.Mex. | 630 |
| KLEE | Ottumwa, Iowa | 1480 |
| KLEI | Kailua, Hawaii | 1240 |
| KLEM | LeMars, Iowa | 1410 |
| KLEN | Killeen, Tex. | 1050 |
| KLEO | Wichita, Kans. | 1480 |
| KLER | Orofino, Idaho | 950 |
| KLEX | Lexington, Mo. | 1570 |
| KLFD | Litchfield, Minn. | 1410 |
| KLGA | Algona, Iowa | 1600 |
| KLGN | Logan, Utah | 1390 |
| KLGR | Redwood Falls, Minn. | 1490 |
| KLHS | Lordsburg, N.M. | 950 |
| KLIB | Liberal, Kans. | 1470 |
| KLIC | Monroe, La. | 1230 |
| KLID | Poplar Bluff, Mo. | 1340 |
| KLIF | Dallas, Tex. | 1190 |
| KLIK | Jefferson City, Mo. | 950 |
| KLIL | Estherville, Iowa | 1340 |
| KLIN | Lincoln, Nebr. | 1400 |
| KLIP | Fowler, Calif. | 1220 |
| KLIQ | Portland, Oreg. | 1290 |
| KLIR | Denver, Colo. | 990 |
| KLIX | Twin Falls, Idaho | 1310 |
| KLIZ | Brainerd, Minn. | 1380 |
| KLKC | Parsons, Kans. | 1540 |
| KLLA | Leesville, La. | 1570 |
| KLLL | Lubbock, Tex. | 1460 |
| KLME | Laramie, Wyo. | 1490 |
| KLMO | Longmont, Colo. | 1050 |
| KLMR | Lamar, Colo. | 920 |
| KLMS | Lincoln, Nebr. | 1480 |
| KLMX | Clayton, N.Mex. | 1450 |
| KLO | Ogden, Utah | 1430 |
| KLOA | Ridgecrest, Calif | 1240 |
| KLOE | Goodland, Kans. | 730 |
| KLOG | Kelso, Wash. | 1490 |
| KLOH | Pipestone, Minn. | 1050 |
| KLOK | San Jose, Calif. | 1170 |
| KLOO | Corvallis, Oreg. | 1350 |
| KLOQ | Yakima, Wash. | 1390 |
| KLOS | Albuquerque, N.Mex. | 1450 |
| KLOU | Lake Charles, La. | 1580 |
| KLOW | Loveland, Colo. | 1570 |
| KLPL | Lake Providence, La. | 1050 |
| KLPM | Minot, N.Dak. | 1390 |
| KLPR | Okla. City, Okla. | 1140 |
| KLPW | Union, Mo. | 1220 |
| KLRA | Little Rock, Ark. | 1010 |
| KLRS | Mountain Grove, Mo. | 1360 |
| KLTF | Little Falls, Minn. | 960 |
| KLTR | Blackwell, Okla. | 1580 |
| KLTZ | Glasgow, Mont. | 1240 |
| KLUB | Salt Lake City, Utah | 570 |
| KLUC | Las Vegas, Nev. | 1050 |
| KLUE | Longview, Tex. | 1280 |
| KLUK | Evanston, Wyo. | 1240 |
| KLUV | Haynesville, La. | 1580 |
| KLVL | Pasadena, Tex. | 1480 |
| KLVT | Levelland, Tex. | 1230 |
| KLWN | Lawrence, Kans. | 1320 |
| KLWT | Lebanon, Mo. | 1230 |
| KLYD | Bakersfield, Calif. | 1350 |
| KLYQ | Hamilton, Mont. | 980 |
| KLYK | Spokane, Wash. | 1230 |
| KLYR | Clarksville, Ark. | 1360 |
| KLZ | Denver, Colo. | 560 |
| KMA | Shenandoah, Iowa | 960 |
| KMAC | San Antonio, Tex. | 630 |
| KMAD | Madill, Okla. | 1550 |
| KMAE | McKinney, Tex. | 1600 |
| KMAK | Fresno, Calif. | 1340 |
| KMAM | Butler, Mo. | 1530 |
| KMAN | Manhattan, Kans. | 1350 |
| KMAQ | Maquoketa, Iowa | 1320 |
| KMAR | Winnsboro, La. | 1570 |
| KMBC | Kansas City, Mo. | 980 |
| KMBL | Junction, Tex. | 1450 |
| KMBO | Tucson, Ariz. | 940 |
| KMBY | Monterey, Calif. | 1240 |
| KMCD | Fairfield, Iowa | 1570 |
| KMCM | McMinnville, Oreg. | 1260 |
| KMCO | Conroe, Tex. | 900 |
| KMDO | Ft. Scott, Kans. | 1600 |
| KMED | Medford, Oreg. | 1440 |
| KMEN | San Bernardino, California | 1290 |
| KMEO | Omaha, Nebr. | 660 |
| KMET | Paradise, Calif. | 930 |
| KMFR | Medford, Ore. | 860 |
| KMHT | Marshall, Tex. | 1450 |
| KMIL | Cameron, Tex. | 1330 |
| KMIN | Grants, N.M. | 980 |
| KMIS | Portageville, Mo. | 1050 |
| KMJ | Fresno, Calif. | 580 |
| KMLB | Monroe, La. | 1440 |
| KMMJ | Grand Island, Nebr. | 750 |
| KMNS | Sioux City, Iowa | 620 |
| KMO | Tacoma, Wash. | 1360 |
| KMON | Great Falls, Mont. | 560 |
| KMOP | Tucson, Ariz. | 1330 |
| KMOR | Littleton, Colo. | 1510 |
| KMOX | St. Louis, Mo. | 1120 |
| KMPC | Los Angeles, Calif. | 710 |
| KMRC | Morgan City, La. | 1430 |
| KMRS | Morris, Minn. | 1230 |
| KMSL | Ukiah, Calif. | 1250 |
| KMUL | Muleshoe, Tex. | 1380 |
| KMUR | Murray, Utah | 1230 |
| KMUS | Muskogee, Okla. | 1380 |
| KMVI | Wailuku, Hawaii | 550 |
| KMYC | Marysville, Calif. | 1410 |
| KMYT | Clayton, Mo. | 1320 |
| KNAF | Fredericksburg, Tex. | 910 |
| KNAK | Salt Lake City, Utah | 1280 |
| KNAL | Victoria, Tex. | 1410 |
| KNBA | Vallejo, Calif. | 1190 |
| KNBC | San Francisco, Calif. | 680 |
| KNBE | Kanab, Utah | 1240 |
| KNBX | Kirkland, Wash. | 1050 |
| KNBY | Newport, Ark. | 1280 |
| KNCK | Concordia, Kans. | 1390 |
| KNCM | Moberly, Mo. | 1230 |
| KNCO | Garden City, Kans. | 1050 |
| KNCY | Nebraska City, Nebr. | 1600 |
| KNDC | Hettinger, N.Dak. | 1490 |
| KNDE | Aztec, N.Mex. | 1340 |
| KNDI | Honolulu, Hawaii | 1270 |
| KNDY | Marysville, Kans. | 1570 |
| KNEA | Jonesboro, Ark. | 970 |
| KNEB | Scottsbluff, Nebr. | 960 |
| KNED | McAlester, Okla. | 1150 |
| KNEL | Brady, Tex. | 1490 |
| KNEM | Nevada, Mo. | 1240 |
| KNET | Palestine, Tex. | 1450 |
| KNEW | Spokane, Wash. | 790 |
| KNEX | McPherson, Kans. | 1540 |
| KNEZ | Lompoc, Calif. | 960 |
| KNGS | Hanford, Calif. | 620 |
| KNIA | Knoxville, Iowa | 1320 |
| KNIM | Maryville, Mo. | 1580 |
| KNIN | Wichita Falls, Tex. | 990 |
| KNIT | Abilene, Tex. | 1280 |
| KNND | Cottage Grove, Oreg. | 1400 |
| KNOC | Natchitoches, La. | 1450 |
| KNOE | Monroe, La. | 1390 |
| KNOG | Nogales, Ariz. | 1340 |
| KNOK | Ft. Worth, Tex. | 970 |
| KNOR | Norman, Okla. | 1400 |
| KNOT | Prescott, Ariz. | 1450 |
| KNOW | Austin, Tex. | 1490 |
| KNOX | Grand Forks, N.Dak. | 1310 |
| KNPT | Newport, Ore. | 1310 |
| KNUJ | New Ulm, Minn. | 860 |
| KNUZ | Houston, Tex. | 1230 |
| KNWC | Sioux Falls, S.D. | 1270 |
| KNWS | Waterloo, Iowa | 1090 |
| KNX | Los Angeles, Calif. | 1070 |
| KOA | Denver, Colo. | 850 |
| KOAC | Corvallis, Oreg. | 550 |
| KOAL | Price, Utah | 1230 |
| KOAM | Pittsburg, Kans. | 860 |
| KOB | Albuquerque, N.Mex. | 770 |
| KOBE | Las Cruces, N.Mex. | 1450 |
| KOBH | Hot Springs, S.Dak. | 580 |
| KOCA | Kilgore, Tex. | 1240 |
| KOCY | Oklahoma City, Okla. | 1340 |
| KODA | Houston, Tex. | 1010 |
| KODE | Joplin, Mo. | 1230 |
| KODI | Cody, Wyo. | 1400 |
| KODL | The Dalles, Oreg. | 1440 |
| KODY | North Platte, Nebr. | 1240 |
| KOEL | Oelwein, Iowa | 950 |
| KOFA | Yuma, Ariz. | 1240 |
| KOFE | Pullman, Wash. | 1150 |
| KOFI | Kalispell, Mont. | 930 |
| KOFO | Ottawa, Kans. | 1220 |
| KOFY | San Mateo, Calif. | 1050 |
| KOGA | Ogallala, Nebr. | 930 |
| KOGT | Orange, Tex. | 1600 |
| KOH | Reno, Nev. | 630 |
| KOHO | Honolulu, Hawaii | 1170 |
| KOHU | Hermiston, Oreg. | 1570 |
| KOIL | Omaha, Nebr. | 1290 |
| KOIN | Portland, Oreg. | 970 |
| KOJM | Havre, Mont. | 610 |
| KOKA | Shreveport, La. | 980 |
| KOKE | Austin, Tex. | 1370 |
| KOKL | Okmulgee, Okla. | 1240 |
| KOKO | Warrensburg, Mo. | 1450 |
| KOKX | Keokuk, Iowa | 1310 |
| KOKY | Little Rock, Ark. | 1440 |
| KOL | Seattle, Wash. | 1300 |
| KOLD | Tucson, Ariz. | 1450 |
| KOLE | Port Arthur, Tex. | 1340 |
| KOLJ | Quanah, Tex. | 1150 |
| KOLO | Reno, Nev. | 920 |
| KOLR | Sterling, Colo. | 1490 |
| KOLS | Pryor, Okla. | 1570 |
| KOLT | Scottsbluff, Nebr. | 1320 |
| KOLY | Mobridge, S.Dak. | 1300 |
| KOMA | Okla. City, Okla. | 1520 |
| KOME | Tulsa, Okla. | 1300 |
| KOMO | Seattle, Wash. | 1000 |
| KOMW | Omak, Wash. | 680 |
| KOMY | Watsonville, Calif. | 1340 |
| KONE | Reno, Nev. | 1450 |
| KONG | Visalia, Calif. | 1400 |
| KONI | Spanish Fork, Utah | 1480 |
| KONO | San Antonio, Tex. | 860 |
| KONP | Port Angeles, Wash. | 1450 |
| KOOK | Billings, Mont. | 970 |
| KOOL | Phoenix, Ariz. | 960 |
| KOOO | Omaha, Nebr. | 1420 |
| KOOS | Coos Bay, Oreg. | 1230 |
| KOPR | Butte, Mont. | 550 |
| KOPY | Alice, Tex. | 1070 |
| KOQT | Bellingham, Wash. | 1550 |
| KORA | Bryan, Tex. | 1240 |
| KORC | Mineral Wells, Tex. | 1140 |
| KORD | Pasco, Wash. | 910 |
| KORE | Eugene, Oreg. | 1450 |
| KORK | Las Vegas, Nev. | 1340 |
| KORN | Mitchell, S.Dak. | 1490 |
| KORT | Grangeville, Idaho | 1230 |
| KOSA | Odessa, Tex. | 1230 |
| KOSE | Osceola, Ark. | 860 |
| KOSI | Aurora, Colo. | 1430 |
| KOSY | Texarkana, Ark. | 790 |
| KOTA | Rapid City, S.Dak. | 1380 |
| KOTE | Fergus Falls, Minn. | 1250 |
| KOTN | Pine Bluff, Ark. | 1490 |
| KOTS | Deming, N.M. | 1230 |
| KOUR | Independence, Iowa | 1220 |
| KOVC | Valley City, N.Dak. | 1490 |
| KOVE | Lander, Wyo. | 1330 |
| KOVO | Provo, Utah | 960 |
| KOWB | Laramie, Wyo. | 1290 |
| KOWL | Bijou, Calif. | 1490 |
| KOWN | Escondido, Calif. | 1450 |
| KOXR | Oxnard, Calif. | 910 |
| KOY | Phoenix, Ariz. | 550 |
| KOYL | Odessa, Tex. | 1310 |
| KOYN | Billings, Mont. | 910 |
| KOZE | Lewiston, Idaho | 1300 |
| KOZI | Chelan, Wash. | 1220 |
| KOZY | Grand Rapids, Minn. | 1490 |
| KPAC | Port Arthur, Tex. | 1250 |
| KPAK | Minden, La. | 1240 |
| KPAL | Palm Springs, Calif. | 1450 |
| KPAM | Portland, Oreg. | 1410 |
| KPAN | Hereford, Tex. | 860 |
| KPAP | Redding, Calif. | 1270 |
| KPAS | Banning, Calif. | 1490 |
| KPAY | Chico, Calif. | 1060 |
| KPBA | Pine Bluff, Ark. | 1590 |
| KPBM | Carlsbad, N.Mex. | 740 |
| KPCA | Marked Tree, Ark. | 1580 |
| KPDN | Pampa, Tex. | 1340 |
| KPDQ | Portland, Oreg. | 800 |
| KPEG | Spokane, Wash. | 1380 |
| KPEL | Lafayette, La. | 1420 |
| KPEP | San Angelo, Tex. | 1420 |
| KPER | Gilroy, Calif. | 1290 |
| KPET | Lamesa, Tex. | 690 |
| KPGE | Page, Ariz. | 1340 |
| KPHO | Phoenix, Ariz. | 910 |
| KPIG | Cedar Rapids, Iowa | 1450 |
| KPIK | Colorado Sprgs., Colo. | 1580 |
| KPIN | Casa Grande, Ariz. | 1260 |
| KPIR | Eugene, Wash. | 1500 |
| KPKW | Pasco, Wash. | 1340 |
| KPLA | Plainview, Tex. | 1050 |
| KPLC | Lake Charles, La. | 1470 |
| KPLT | Paris, Tex. | 1490 |
| KPLW | Union, Mo. | 1220 |
| KPLY | Crescent City, Calif. | 1240 |
| KPMC | Bakersfield, Calif. | 1560 |
| KPNG | Port Neches, Tex. | 1150 |
| KPOC | Pocahontas, Ark. | 1420 |
| KPOD | Crescent City, Calif. | 1310 |
| KPOF | Denver, Colo. | 910 |
| KPOI | Honolulu, Hawaii | 1380 |
| KPOJ | Portland, Oreg. | 1330 |
| KPOK | Scottsdale, Ariz. | 1440 |
| KPOL | Los Angeles, Calif. | 1540 |
| KPON | Anderson, Calif. | 1580 |
| KPOR | Quincy, Wash. | 1370 |
| KPOW | Powell, Wyo. | 1260 |
| KPPC | Pasadena, Calif. | 1240 |
| KPQ | Wenatchee, Wash. | 560 |
| KPRB | Redmond, Oreg. | 1240 |
| KPRC | Houston, Tex. | 950 |
| KPRK | Livingston, Mont. | 1340 |
| KPRL | Paso Robles, Calif. | 1230 |
| KPRO | Riverside, Calif. | 1440 |
| KPRS | Kansas City, Mo. | 1590 |
| KPRT | Pratt, Kans. | 1290 |
| KPSO | Falfurrias, Tex. | 1260 |
| KPST | Preston, Idaho | 1340 |
| KPTL | Carson City, Nev. | 1300 |
| KPUG | Bellingham, Wash. | 1170 |
| KQAQ | Austin, Minn. | 970 |
| KQDF | Spokane, Wash. | 1280 |
| KQDI | Bismarck, N.D. | 1350 |
| KQDY | Minot, N.Dak. | 1320 |
| KQEN | Roseburg, Oreg. | 1250 |
| KQEO | Albuquerque, N.Mex. | 920 |
| KQIK | Lakeview, Oreg. | 1230 |
| KQMS | Redding, Calif. | 1400 |
| KQTE | Missoula, Mont. | 1340 |
| KQV | Pittsburgh, Pa. | 1410 |
| KQYX | Joplin, Mo. | 1560 |
| KRAC | Alamogordo, N.M. | 1270 |
| KRAD | E. Grand Forks, Minn. | 1590 |
| KRAE | Cheyenne, Wyo. | 1480 |
| KRAI | Craig, Colo. | 550 |
| KRAK | Stockton, Calif. | 1140 |
| KRAL | Rawlins, Wyo. | 1240 |
| KRAM | Las Vegas, Nev. | 920 |
| KRAN | Morton, Tex. | 1280 |
| KRAY | Amarillo, Tex. | 1360 |
| KRAZ | Albuquerque, N.Mex. | 1580 |
| KRBA | Lufkin, Tex. | 1340 |
| KRBC | Abilene, Tex. | 1470 |
| KRBI | St. Peter, Minn. | 1310 |
| KRBN | Red Lodge, Mont. | 1450 |
| KRCK | Ridgecrest, Calif. | 1360 |
| KRCO | Prineville, Oreg. | 690 |
| KRDG | Redding, Calif. | 1230 |
| KRDO | Colo. Springs, Colo. | 1240 |
| KRDP | Reedsport, Oreg. | 1470 |
| KRDU | Dinuba, Calif. | 1240 |
| KRE | Berkeley, Calif. | 1400 |
| KREB | Shreveport, La. | 1550 |
| KRED | Eureka, Calif. | 1480 |
| KREH | Oakdale, La. | 900 |
| KREI | Farmington, Mo. | 800 |
| KREM | Spokane, Wash. | 970 |
| KREO | Indio, Calif. | 1400 |
| KREW | Sunnyside, Wash. | 1230 |
| KREX | Grand Junc., Colo. | 920 |
| KRFO | Owatonna, Minn. | 1390 |
| KRFS | Superior, Nebr. | 1600 |
| KRGI | Grand Island, Neb. | 1430 |
| KRGV | Weslaco, Tex. | 1290 |
| KRHD | Duncan, Okla. | 1350 |
| KRIB | Mason City, Iowa | 1490 |
| KRIC | Beaumont, Tex. | 1450 |
| KRIG | Odessa, Tex. | 1410 |
| KRIH | Rayville, La. | 990 |
| KRIO | McAllen, Tex. | 910 |
| KRIZ | Phoenix, Ariz. | 1230 |
| KRKC | King City, Calif. | 1570 |
| KRKD | Los Angeles, Calif. | 1150 |
| KRKO | Everett, Wash. | 1380 |
| KRLC | Lewiston, Idaho | 1350 |
| KRLD | Dallas, Tex. | 1080 |
| KRLN | Canon City, Colo. | 1400 |
| KRLW | Walnut Ridge, Ark. | 1320 |
| KRMD | Shreveport, La. | 1340 |
| KRMG | Tulsa, Okla. | 740 |
| KRML | Carmel, Calif. | 1410 |
| KRMO | Monett, Mo. | 990 |
| KRMS | Osage Beach, Mo. | 1150 |
| KRNO | San Bernardino, Calif. | 1240 |
| KRNR | Roseburg, Oreg. | 1490 |
| KRNS | Burns, Oreg. | 1230 |
| KRNT | Des Moines, Iowa | 1350 |
| KRNY | Kearney, Nebr. | 1460 |
| KROC | Rochester, Minn. | 1340 |
| KROD | El Paso, Tex. | 600 |
| KROE | Sheridan, Wyo. | 930 |

| C.L. | Location | Kc. |
|---|---|---|
| KROF | Abbeville, La. | 960 |
| KROP | Brawley, Calif. | 1300 |
| KROS | Clinton, Iowa | 1340 |
| KROW | Dallas, Ore. | 1460 |
| KROX | Crookston, Minn. | 1260 |
| KROY | Sacramento, Calif. | 1240 |
| KRPL | Moscow, Idaho | 1400 |
| KRRR | Ruidoso, N.Mex. | 1340 |
| KRRV | Sherman, Tex. | 910 |
| KRSC | Othello, Wash. | 1400 |
| KRSD | Rapid City, S.Dak. | 1340 |
| KRSI | St. Louis Park, Minn. | 950 |
| KRSL | Russell, Kans. | 990 |
| KRSN | Los Alamos, N.Mex. | 1490 |
| KRSY | Roswell, N.Mex. | 1230 |
| KRTN | Raton, N.Mex. | 1490 |
| KRTR | Thermopolis, Wyo. | 1490 |
| KRUN | Ballinger, Tex. | 1400 |
| KRUS | Ruston, La. | 1490 |
| KRUX | Glendale, Ariz. | 1360 |
| KRVC | Ashland, Oreg. | 1350 |
| KRVN | Lexington, Nebr. | 1010 |
| KRXK | Rexburg, Idaho | 1230 |
| KRYS | Corpus Christi, Tex. | 1360 |
| KRZE | Farmington, N.M. | 1280 |
| KRZY | Grand Prairie, Tex. | 730 |
| KSAC | Manhattan, Kans. | 580 |
| KSAL | Salina, Kans. | 1150 |
| KSAM | Huntsville, Tex. | 1490 |
| KSAN | San Francisco, Calif. | 1450 |
| KSAY | San Francisco, Calif. | 1010 |
| KSBW | Salinas, Calif. | 1380 |
| KSCB | Liberal, Kans. | 600 |
| KSCJ | Sioux City, Iowa | 1360 |
| KSCO | Santa Cruz, Calif. | 1080 |
| KSD | St. Louis, Mo. | 550 |
| KSON | Aberdeen, S.Dak. | 930 |
| KSOO | San Oiego, Calif. | 1130 |
| KSDR | Waterton, S.Oak. | 1480 |
| KSEE | Santa Maria, Calif. | 1480 |
| KSEI | Pocatello, Idaho | 930 |
| KSEK | Pittsburg, Kans. | 1340 |
| KSEL | Lubbock, Tex. | 950 |
| KSEM | Moses Lake, Wash. | 1470 |
| KSEN | Shelby, Mont. | 1150 |
| KSEO | Durant, Okla. | 750 |
| KSET | El Paso, Tex. | 1340 |
| KSEW | Sitka, Alaska | 1400 |
| KSEY | Seymour, Tex. | 1230 |
| KSFA | Nacogdoches, Tex. | 860 |
| KSFE | Needles, Calif. | 1340 |
| KSFO | San Francisco, Calif. | 560 |
| KSGM | Chester, Ill. | 980 |
| KSIB | Creston, Iowa | 1520 |
| KSID | Sidney, Nebr. | 1340 |
| KSIG | Crowley, La. | 1450 |
| KSIL | Silver City, N.Mex. | 1340 |
| KSIM | Sikeston, Mo. | 1400 |
| KSIR | Wichita, Kans. | 900 |
| KSIS | Sedalia, Mo. | 1050 |
| KSIW | Woodward, Okla. | 1450 |
| KSIX | Corpus Christi, Tex. | 1230 |
| KSJB | Jamestown, N.Dak. | 600 |
| KSKI | Sun Valley, Idaho | 1340 |
| KSKY | Oallas, Tex. | 660 |
| KSL | Salt Lake City, Utah | 1160 |
| KSLM | Salem, Oreg. | 1390 |
| KSLO | Opelousas, La. | 1230 |
| KSLV | Monte Vista, Colo. | 1240 |
| KSMA | Santa Maria, Calif. | 1240 |
| KSMN | Mason City, Iowa | 1010 |
| KSMO | Salem, Mo. | 1340 |
| KSNB | Santa Barbara, Calif. | 1290 |
| KSNN | Pocatello, Ida. | 1290 |
| KSNY | Snyder, Tex. | 1450 |
| KSO | Des Moines, Iowa | 1460 |
| KSOK | Arkansas City, Kans. | 1280 |
| KSON | San Oiego, Calif. | 1240 |
| KSOO | Sioux Falls, S.Oak. | 1140 |
| KSOP | Salt Lake City, Utah | 1370 |
| KSOX | Raymondville, Tex. | 1240 |
| KSPA | Santa Paula, Calif. | 1400 |
| KSPI | Stillwater, Okla. | 780 |
| KSPL | Diboll, Tex. | 1260 |
| KSPT | Sandpoint, Idaho | 1400 |
| KSRA | Salmon, Idaho | 960 |
| KSRC | Socorro, N.Mex. | 1290 |
| KSRO | Santa Rosa, Calif. | 1350 |
| KSRV | Ontario, Oreg. | 1380 |
| KSSS | Colorado Springs, Colo. | 740 |
| KSST | Sulphur Springs, Tex. | 1230 |
| KSTA | Coleman, Tex. | 1000 |
| KSTB | Breckenridge, Tex. | 1430 |
| KSTL | St. Louis, Mo. | 690 |
| KSTH | St. Helen's, Oreg. | 1600 |
| KSTN | Stockton, Calif. | 1420 |
| KSTP | St. Paul, Minn. | 1500 |
| KSTR | Grand Junction, Colo. | 620 |
| KSTT | Davenport, Iowa | 1170 |
| KSTV | Stephenville, Tex. | 1510 |
| KSUB | Cedar City, Utah | 590 |
| KSUD | W. Memphis, Ark. | 730 |
| KSUE | Susanville, Calif. | 1240 |
| KSUM | Fairmont, Minn. | 1370 |
| KSUN | Bisbee, Ariz. | 1230 |
| KSVC | Richfield, Utah | 980 |
| KSVN | Ogden, Utah | 730 |
| KSVP | Artesia, N.Mex. | 990 |
| KSWA | Graham, Tex. | 1330 |
| KSWC | Tucson, Ariz. | 1550 |
| KSWI | Council Bluffs, Iowa | 1560 |
| KSWM | Aurora, Mo. | 940 |
| KSWO | Lawton, Okla. | 1380 |
| KSXX | Salt Lake City, Utah | 630 |
| KSYC | Yreka, Calif. | 1490 |
| KSYL | Alexandria, La. | 970 |
| KSYX | Santa Rosa, N.Mex. | 1420 |
| KTAC | Tacoma, Wash. | 850 |
| KTAE | Taylor, Tex. | 1260 |
| KTAN | Tucson, Ariz. | 580 |
| KTAR | Phoenix, Ariz. | 620 |
| KTAT | Frederick, Okla. | 1570 |
| KTBB | Tyler, Tex. | 600 |
| KTBC | Austin, Tex. | 590 |
| KTCB | Malden, Mo. | 1470 |
| KTCI | Terrytown, Nebr. | 690 |
| KTCN | Berryville, Ark. | 1480 |
| KTCR | Minneapolis, Minn. | 690 |
| KTCS | Fort Smith, Ark. | 1410 |
| KTDO | Toledo, Oreg. | 1230 |
| KTEE | Idaho Falls, Idaho | 900 |
| KTEL | Walla Walla, Wash. | 1490 |
| KTEM | Temple, Tex. | 1400 |
| KTEO | San Angelo, Tex. | 1340 |
| KTER | Terrell, Tex. | 1570 |
| KTFI | Twin Falls, Idaho | 1270 |
| KTFO | Seminole, Tenn. | 1250 |
| KTFS | Texarkana, Tex. | 1400 |
| KTFY | Brownfield, Tex. | 1300 |
| KTHE | Thermopolis, Wyo. | 1240 |
| KTHS | Little Rock, Ark. | 1090 |
| KTHT | Houston, Tex. | 790 |
| KTIB | Thibodaux, La. | 630 |
| KTIL | Tillamook, Oreg. | 1590 |
| KTIM | San Rafael, Calif. | 1510 |
| KTIP | Porterville, Calif. | 1450 |
| KTIS | Minneapolis, Minn. | 900 |
| KTJS | Hobart, Okla. | 1420 |
| KTKN | Ketchikan, Alaska | 930 |
| KTKR | Taft, Calif. | 1310 |
| KTKT | Tucson, Ariz. | 990 |
| KTLD | Tullulah, La. | 1360 |
| KTLN | Oenver, Colo. | 1280 |
| KTLO | Mtn. Home, Ark. | 1490 |
| KTLQ | Tahlequah, Okla. | 1350 |
| KTLU | Rusk, Tex. | 1580 |
| KTLW | Texas City, Tex. | 920 |
| KTMC | McAlester, Okla. | 1400 |
| KTMS | Santa Barbara, Calif. | 1250 |
| KTNC | Falls City, Nebr. | 1230 |
| KTNM | Tucumcari, N.Mex. | 1400 |
| KTNT | Tacoma, Wash. | 1400 |
| KTOC | Jonesboro, La. | 920 |
| KTOD | Sinton, Tex. | 1590 |
| KTOE | Mankato, Minn. | 1420 |
| KTOH | Lihue, Hawaii | 1490 |
| KTOK | Oklahoma City, Okla. | 1000 |
| KTON | Belton, Tex. | 940 |
| KTOO | Henderson, Nev. | 1280 |
| KTOP | Topeka, Kans. | 1490 |
| KTOW | Sand Spring, Okla. | 1340 |
| KTPA | Prescott, Ark. | 1370 |
| KTRB | Modesto, Calif. | 860 |
| KTRC | Santa Fe, N.Mex. | 1400 |
| KTRE | Lufkin, Tex. | 1420 |
| KTRF | Thief River Falls, Minn. | 1230 |
| KTRG | Honolulu, Hawaii | 990 |
| KTRH | Houston, Tex. | 740 |
| KTRI | Sioux City, Iowa | 1470 |
| KTRM | Beaumont, Tex. | 990 |
| KTRN | Wichita Falls, Tex. | 1290 |
| KTRY | Bastrop, La. | 730 |
| KTSA | San Antonio, Tex. | 550 |
| KTSL | Burnett, Tex. | 1340 |
| KTSM | El Paso, Tex. | 1380 |
| KTTN | Trenton, Mo. | 1600 |
| KTTR | Rolla, Mo. | 1490 |
| KTTS | Springfield, Mo. | 1400 |
| KTUC | Tucson, Ariz. | 1400 |
| KTUE | Tulia, Tex. | 1260 |
| KTUX | Pueblo, Colo. | 1480 |
| KTW | Seattle, Wash. | 1250 |
| KTWO | Casper, Wyo. | 1470 |
| KTXJ | Jasper, Tex. | 1350 |
| KTXO | Sherman, Tex. | 1500 |
| KTYM | Inglewood, Calif. | 1460 |
| KUAM | Agana, Guam | 610 |
| KUBA | Yuba City, Calif. | 1600 |
| KUBC | Montrose, Colo. | 580 |
| KUBE | Pendleton, Oreg. | 1050 |
| KUDE | Oceanside, Calif. | 1320 |
| KUOI | Great Falls, Mont. | 1450 |
| KUDL | Kansas City, Mo. | 1380 |
| KUOU | Ventura, Calif. | 1590 |
| KUDY | Seattle, Wash. | 910 |
| KUEN | Wenatchee, Wash. | 900 |
| KUEQ | Phoenix, Ariz. | 740 |
| KUGN | Eugene, Oreg. | 590 |
| KUIK | Hillsboro, Oreg. | 1360 |
| KUJ | Walla Walla, Wash. | 1420 |
| KUKA | San Antonio, Tex. | 1250 |
| KUKI | Ukiah, Calif. | 1400 |
| KUKO | Post, Tex. | 1370 |
| KUKU | Willow Springs, Mo. | 1330 |
| KULA | Honolulu, Hawaii | 690 |
| KULE | Ephrata, Wash. | 730 |
| KULP | El Campo, Tex. | 1390 |
| KUMA | Pendleton, Oreg. | 1290 |
| KUNO | Corpus Christi, Tex. | 1400 |
| KUOA | Siloam Springs, Ark. | 1290 |
| KUOM | Minneapolis, Minn. | 770 |
| KUPD | Tempe, Ariz. | 1060 |
| KUPI | Idaho Falls, Idaho | 980 |
| KURA | Moab, Utah | 1450 |
| KURL | Billings, Mont. | 730 |
| KURV | Edinburg, Tex. | 710 |
| KURY | Brookings, Oreg. | 910 |
| KUSD | Vermillion, S.Dak. | 690 |
| KUSH | Cushing, Okla. | 1600 |
| KUSN | St. Joseph, Mo. | 1270 |
| KUTA | Blanding, Utah | 790 |
| KUTI | Yakima, Wash. | 980 |
| KUTT | Fargo, N.Dak. | 1550 |
| KUTY | Palmdale, Calif. | 1470 |
| KUVR | Holdredge, Nebr. | 1380 |
| KUXL | Golden Valley, Minn. | |
| KUZN | W. Monroe, La. | 1310 |
| KUZZ | Bakersfield, Calif. | 800 |
| KVAN | Vancouver, Wash. | 1480 |
| KVCK | Wolf Point, Nebr. | 1450 |
| KVCL | Winnfield, La. | 1270 |
| KVCV | Redding, Calif. | 600 |
| KVEC | San Luis Obispo, Calif. | 920 |
| KVEE | Conway, Ark. | 1330 |
| KVEG | Las Vegas, Nev. | 970 |
| KVEL | Vernal, Utah | 1250 |
| KVEN | Ventura, Calif. | 1450 |
| KVER | Clovis, N.Mex. | 980 |
| KVET | Austin, Tex. | 1300 |
| KVFC | Cortez, Colo. | 740 |
| KVFD | Ft. Dodge, Iowa | 1400 |
| KVGB | Great Bend, Kans. | 1590 |
| KVI | Seattle, Wash. | 570 |
| KVIC | Victoria, Tex. | 1340 |
| KVIL | Highland Park, Tex. | 1150 |
| KVIM | New Iberia, La. | 1360 |
| KVIN | Vinita, Okla. | 1470 |
| KVIP | Redding, Calif. | 540 |
| KVKM | Monahans, Tex. | 1330 |
| KVLB | Cleveland, Tex. | 1410 |
| KVLC | Little Rock, Ark. | 1050 |
| KVLF | Alpine, Tex. | 1240 |
| KVLG | LaGrange, Tex. | 1570 |
| KVLH | Pauls Valley, Okla. | 1470 |
| KVLL | Livingston, Tex. | 1220 |
| KVMA | Magnolia, Ark. | 630 |
| KVMC | Colorado City, Tex. | 1320 |
| KVML | Sonora, Calif. | 1450 |
| KVNA | Flagstaff, Ariz. | 690 |
| KVNC | Winslow, Ariz. | 1010 |
| KVNI | Coeur d'Alene, Idaho | 1240 |
| KVNU | Logan, Utah | 610 |
| KVOB | Bastrop, La. | 1340 |
| KVOC | Casper, Wyo. | 1230 |
| KVOD | Albuquerque, N.M. | 730 |
| KVOE | Emporia, Kans. | 1400 |
| KVOG | Ogden, Utah | 1490 |
| KVOL | Lafayette, La. | 1330 |
| KVOM | Morrilton, Ark. | 800 |
| KVON | Napa, Calif. | 1440 |
| KVOO | Tulsa, Okla. | 1170 |
| KVOP | Plainview, Tex. | 1400 |
| KVOR | Colo. Springs, Colo. | 1300 |
| KVOU | Uvalde, Tex. | 1400 |
| KVOW | Riverton, Wyo. | 1450 |
| KVOX | Moorhead, Minn. | 1280 |
| KVOY | Yuma, Ariz. | 1400 |
| KVOZ | Laredo, Tex. | 1490 |
| KVPH | Canyon, Tex. | 1550 |
| KVPI | Ville Platte, La. | 1050 |
| KVRC | Arkadelphia, Ark. | 1240 |
| KVRO | Cottonwood, Ariz. | 1240 |
| KVRE | Santa Rosa, Calif. | 1460 |
| KVRH | Salida, Colo. | 1340 |
| KVRS | Rock Springs, Wyo. | 1360 |
| KVSA | McGehee, Ark. | 1220 |
| KVSF | Santa Fe, N.Mex. | 1260 |
| KVSH | Valentine, Nebr. | 940 |
| KVSO | Ardmore, Okla. | 1240 |
| KVWC | Vernon, Tex. | 1490 |
| KVWM | Show Low, Ariz. | 1050 |
| KVWO | Cheyenne, Wyo. | 1370 |
| KWAC | Bakersfield, Calif. | 1490 |
| KWAO | Wadena, Minn. | 920 |
| KWAK | Stuttgart, Ark. | 1240 |
| KWAL | Wallace, Idaho | 620 |
| KWAM | Memphis, Tenn. | 990 |
| KWAT | Watertown, S.Oak. | 950 |
| KWBA | Baytown, Tex. | 1360 |
| KWBB | Wichita, Kans. | 1410 |
| KWBC | Navasota, Tex. | 1550 |
| KWBE | Beatrice, Nebr. | 1450 |
| KWBG | Boone, Iowa | 1590 |
| KWBW | Hutchinson, Kans. | 1450 |
| KWCB | Searcy, Ark. | 1300 |
| KWCL | Oak Grove, La. | 1280 |
| KWCO | Chickasha, Okla. | 1560 |
| KWEB | Rochester, Minn. | 1270 |
| KWED | Seguin, Tex. | 1580 |
| KWEI | Weiser, Idaho | 1260 |
| KWEL | Midland, Tex. | 1600 |
| KWEW | Hobbs, N.Mex. | 1480 |
| KWFR | San Angelo, Tex. | 1260 |
| KWFT | Wichita Falls, Tex. | 620 |
| KWG | Stockton, Calif. | 1230 |
| KWHI | Brenham, Tex. | 1280 |
| KWHK | Hutchinson, Kans. | 1260 |
| KWHN | Fort Smith, Ark. | 1320 |
| KWHO | Salt Lake City, Utah | 860 |
| KWHW | Altus, Okla. | 1450 |
| KWIC | Salt Lake City, Utah | 1570 |
| KWIK | Pocatello, Idaho | 1240 |
| KWIL | Albany, Oreg. | 790 |
| KWIN | Ashland, Oreg. | 580 |
| KWIP | Merced, Calif. | 1580 |
| KWIQ | Moses Lake, Wash. | 1260 |
| KWIV | Douglas, Wyo. | 1050 |
| KWIZ | Santa Ana, Calif. | 1480 |
| KWJJ | Portland, Oreg. | 1080 |
| KWK | St. Louis, Mo. | 1380 |
| KWKC | Abilene, Tex. | 1340 |
| KWKH | Shreveport, La. | 1130 |
| KWKW | Pasadena, Calif. | 1300 |
| KWKY | Des Moines, Iowa | 1150 |
| KWLC | Decorah, Iowa | 1240 |
| KWLO | Liberty, Tex. | 1050 |
| KWLM | Willmar, Minn. | 1340 |
| KWLW | Nampa, Idaho | 1340 |
| KWMT | Ft. Dodge, Iowa | 540 |
| KWNA | Winnemucca, Nev. | 1400 |
| KWNO | Winona, Minn. | 1230 |
| KWNT | Davenport, Iowa | 1580 |
| KWOA | Worthington, Minn. | 730 |
| KWOC | Poplar Bluff, Mo. | 930 |
| KWOE | Clinton, Okla. | 1320 |
| KWON | Bartlesville, Okla. | 1400 |
| KWOR | Worland, Wyo. | 1340 |
| KWOS | Jefferson City, Mo. | 1240 |
| KWOW | Pomona, Calif. | 1600 |
| KWPC | Muscatine, Iowa | 860 |
| KWPM | West Plains, Mo. | 1450 |
| KWPR | Claremore, Okla. | 1270 |
| KWRA | Idaho Falls, Idaho | 1400 |
| KWRD | Henderson, Tex. | 1470 |
| KWRE | Warrenton, Mo. | 730 |
| KWRF | Warren, Ark. | 860 |
| KWRO | Coquille, Oreg. | 630 |
| KWRT | Boonville, Mo. | 1370 |
| KWRV | McCook, Nebr. | 1360 |
| KWRW | Guthrie, Okla. | 1490 |
| KWSC | Pullman, Wash. | 1250 |
| KWSD | Mt. Shasta, Calif. | 620 |
| KWSH | Wewoka-Seminole, Oklahoma | 1260 |
| KWSK | Pratt, Kans. | 1570 |
| KWSL | Grand Junction, Colo. | 1340 |
| KWSO | Wasco, Calif. | 1050 |
| KWTC | Barstow, Calif. | 1230 |
| KWTO | Springfield, Mo. | 560 |
| KWTX | Waco, Tex. | 1230 |
| KWVN | Concord, Calif. | 1480 |
| KWVR | Enterprise, Oreg. | 1340 |
| KWVY | Waverly, Iowa | 1470 |
| KWWL | Waterloo, Iowa | 1330 |
| KWYK | Farmington, N.Mex. | 960 |
| KWYN | Wynne, Ark. | 1400 |
| KWYO | Sheridan, Wyo. | 1410 |
| KWYR | Winner, S.Dak. | 1260 |
| KWYZ | Everett, Wash. | 1230 |
| KXA | Seattle, Wash. | 770 |
| KXAR | Hope, Ark. | 1490 |
| KXEL | Waterloo, Iowa | 1540 |
| KXEN | St. Louis, Mo. | 1010 |
| KXEO | Mexico, Mo. | 1340 |
| KXEW | Tucson, Ariz. | 1600 |
| KXGI | Ft. Madison, Iowa | 1360 |
| KXGN | Glendive, Mont. | 1400 |
| KXIC | Iowa City, Iowa | 800 |
| KXIT | Oalhart, Tex. | 1410 |
| KXIV | Phoenix, Ariz. | 1400 |
| KXJK | Forrest City, Ark. | 950 |
| KXKW | Lafayette, La. | 1520 |
| KXL | Portland, Oreg. | 750 |
| KXLE | Ellensburg, Wash. | 1240 |
| KXLF | Butte, Mont. | 1370 |
| KXLJ | Helena, Mont. | 1240 |
| KXLL | Missoula, Mont. | 1450 |
| KXLO | Lewiston, Mont. | 1230 |
| KXLR | Little Rock, Ark. | 1150 |
| KXLW | Clayton, Mo. | 1320 |
| KXLY | Spokane, Wash. | 920 |
| KXO | El Centro, Calif. | 1230 |
| KXOA | Sacramento, Calif. | 1470 |
| KXOK | St. Louis, Mo. | 630 |
| KXOL | Ft. Worth, Tex. | 1360 |
| KXOX | Sweetwater, Tex. | 1240 |
| KXRA | Alexandria, Minn. | 1490 |
| KXRJ | Russellville, Ark. | 1490 |
| KXRO | Aberdeen, Wash. | 1320 |
| KXRX | San Jose, Calif. | 1500 |
| KXXL | Bozeman, Mont. | 1450 |
| KXXX | Colby, Kans. | 790 |
| KXYZ | Houston, Tex. | 1320 |
| KYA | San Francisco, Calif. | 1260 |
| KYCA | Prescott, Ariz. | 1490 |
| KYCN | Wheatland, Wyo. | 1340 |
| KYES | Roseburg, Oreg. | 950 |
| KYJC | Medford, Oreg. | 1230 |
| KYME | Boise, Idaho | 740 |
| KYND | Tempe, Ariz. | 1580 |
| KYNG | Coos Bay, Oreg. | 1420 |
| KYNO | Fresno, Calif. | 1300 |
| KYNT | Yankton, S.Oak. | 1450 |
| KYOK | Houston, Tex. | 1590 |
| KYOR | Blythe, Calif. | 1450 |
| KYOS | Merced, Calif. | 1480 |
| KYOU | Greeley, Colo. | 1450 |
| KYRO | Potosi, Mo. | 1280 |
| KYSM | Mankato, Minn. | 1230 |
| KYSN | Colorado Sprgs., Colo. | 1460 |
| KYSS | Missoula, Mont. | 910 |
| KYUM | Yuma, Ariz. | 560 |
| KYVA | Gallup, N.Mex. | 1230 |
| KYW | Cleveland, Ohio | 1100 |
| KZEE | Weatherford, Tex. | 1220 |
| KZEY | Tyler, Tex. | 690 |
| KZIP | Amarillo, Tex. | 1310 |
| KZIX | Fort Collins, Colo. | 600 |
| KZNG | Hot Springs, Ark. | 1470 |
| KZOK | Prescott, Ariz. | 1340 |
| KZOL | Farwell, Tex. | 1570 |
| KZON | Tolleson, Ariz. | 1190 |
| KZOT | Marianna, Ark. | 1460 |
| KZOW | Globe, Ariz. | 1240 |
| KZUN | Opportunity, Wash. | 630 |
| KZZN | Littlefield, Tex. | 1490 |
| WAAA | Winston-Salem, N.C. | 980 |
| WAAB | Worcester, Mass. | 1440 |
| WAAF | Chicago, Ill. | 950 |
| WAAG | Adel, Ga. | 1470 |
| WAAK | Dallas, N.C. | 960 |
| WAAP | Peoria, Ill. | 1350 |
| WAAT | Trenton, N.J. | 1300 |
| WAAX | Gadsden, Ala. | 570 |
| WAAY | Huntsville, Ala. | 1550 |
| WABA | Aguadilla, P.Rico | 850 |
| WABB | Mobile, Ala. | 1480 |
| WABC | New York, N.Y. | 770 |

| C.L. | Location | Kc. |
|---|---|---|
| WABF | Fairhope, Ala. | 1220 |
| WABG | Greenwood, Miss. | 960 |
| WABH | Deerfield, Va. | 1150 |
| WABI | Bangor, Maine | 910 |
| WABJ | Adrian, Mich. | 1490 |
| WABL | Amite, La. | 1570 |
| WABO | Waynesboro, Miss. | 990 |
| WABQ | Cleveland, Ohio | 1540 |
| WABR | Winter Park, Fla. | 1440 |
| WABT | Tuskegee, Ala. | 580 |
| WABV | Abbeville, S.C. | 1590 |
| WABW | Annapolis, Md. | 810 |
| WABY | Albany, N.Y. | 1400 |
| WABZ | Albemarle, N.C. | 1010 |
| WACA | Camden, S.C. | 1590 |
| WACB | Kittanning, Pa. | 1380 |
| WACE | Chicopee, Mass. | 730 |
| WACK | Newark, N.Y. | 1420 |
| WACL | Waycross, Ga. | 570 |
| WACO | Waco, Tex. | 1460 |
| WACR | Columbus, Miss. | 1050 |
| WACT | Tuscaloosa, Ala. | 1420 |
| WADA | Shelby, N.C. | 1390 |
| WADC | Akron, Ohio | 1350 |
| WADE | Wadesboro, N.C. | 1210 |
| WADK | Newport, R.I. | 1540 |
| WADO | New York, N.Y. | 1280 |
| WADP | Kane, Pa. | 960 |
| WADS | Ansonia, Conn. | 690 |
| WAEB | Allentown, Pa. | 790 |
| WAEL | Mayaguez, P.Rico | 600 |
| WAFC | Staunton, Va. | 900 |
| WAFS | Amsterdam, N.Y. | 1570 |
| WAGE | Leesburg, Va. | 1290 |
| WAGF | Dothan, Ala. | 1320 |
| WAGG | Franklin, Tenn. | 950 |
| WAGM | Presque Isle, Maine | 950 |
| WAGN | Menominee, Mich. | 1340 |
| WAGR | Lumberton, N.C. | 580 |
| WAGS | Bishopville, S.C. | 1380 |
| WAGY | Forest City, N.C. | 1320 |
| WAIK | Galesburg, Ill. | 1590 |
| WAIL | Baton Rouge, La. | 1460 |
| WAIM | Anderson, S.C. | 1230 |
| WAIN | Columbia, Ky. | 1270 |
| WAIP | Prichard, Ala. | 1270 |
| WAIR | Winston-Salem, N.C. | 1340 |
| WAIT | Chicago, Ill. | 820 |
| WAJF | Decatur, Ala. | 1490 |
| WAJR | Morgantown, W.Va. | 1440 |
| WAKE | Atlanta, Ga. | 1340 |
| WAKI | McMinnville, Tenn. | 1230 |
| WAKN | Aiken, S.C. | 990 |
| WAKO | Lawrenceville, Ill. | 910 |
| WAKR | Akron, Ohio | 1590 |
| WAKY | Louisville, Ky. | 790 |
| WALA | Mobile, Ala. | 1410 |
| WALD | Walterboro, S.C. | 1220 |
| WALE | Fall River, Mass. | 1400 |
| WALG | Albany, Ga. | 1590 |
| WALK | Patchogue, N.Y. | 1370 |
| WALL | Middletown, N.Y. | 1340 |
| WALM | Albion, Mich. | 1260 |
| WALO | Humacao, P.R. | 1240 |
| WALT | Tampa, Fla. | 1110 |
| WALY | Herkimer, N.Y. | 1420 |
| WAMD | Aberdeen, Md. | 970 |
| WAME | Miami, Fla. | 1260 |
| WAMI | Opp, Ala. | 860 |
| WAML | Laurel, Miss. | 1340 |
| WAMM | Flint, Mich. | 1420 |
| WAMO | Homestead, Pa. | 860 |
| WAMR | Venice, Fla. | 1320 |
| WAMS | Wilmington, Del. | 1380 |
| WAMW | Washington, Ind. | 1580 |
| WAMY | Amory, Miss. | 1580 |
| WANA | Anniston, Ala. | 1490 |
| WANB | Waynesburg, Pa. | 1580 |
| WAND | Canton, Ohio | 900 |
| WANE | Ft. Wayne, Ind. | 1450 |
| WANN | Annapolis, Md. | 1190 |
| WANS | Anderson, S.C. | 1280 |
| WANT | Richmond, Va. | 990 |
| WANY | Albany, Ky. | 1390 |
| WAOK | Atlanta, Ga. | 1380 |
| WAOV | Vincennes, Ind. | 1450 |
| WAPA | San Juan, P.R. | 680 |
| WAPC | Riverhead, N.Y. | 1570 |
| WAPE | Jacksonville, Fla. | 690 |
| WAPF | McComb, Miss. | 980 |
| WAPG | Arcadia, Fla. | 1480 |
| WAPI | Birmingham, Ala. | 1070 |
| WAPL | Appleton, Wis. | 1570 |
| WAPO | Chattanooga, Tenn. | 1150 |
| WAPX | Montgomery, Ala. | 1600 |
| WAQE | Towson, Md. | 1570 |
| WARA | Attleboro, Mass. | 1320 |
| WARB | Covington, La. | 730 |
| WARD | Johnstown, Pa. | 1490 |
| WARE | Ware, Mass. | 1250 |
| WARF | Jasper, Ala. | 1240 |
| WARI | Abbeville, Ala. | 1480 |
| WARK | Hagerstown, Md. | 1490 |
| WARL | Arlington, Va. | 780 |
| WARM | Scranton, Pa. | 590 |
| WARN | Ft. Pierce, Fla. | 1330 |
| WARO | Canonsburg, Pa. | 540 |
| WARU | Peru, Ind. | 1600 |
| WASA | Havre de Grace, Md. | 1330 |
| WASK | Lafayette, Ind. | 1450 |
| WATA | Boone, N.C. | 1450 |
| WATC | Gaylord, Mich. | 900 |
| WATE | Knoxville, Tenn. | 620 |
| WATH | Athens, Ohio | 970 |
| WATK | Antigo, Wis. | 900 |
| WATM | Atmore, Ala. | 1590 |
| WATN | Watertown, N.Y. | 1240 |
| WATO | Oak Ridge, Tenn. | 1290 |
| WATP | Marion, S.C. | 1430 |
| WATR | Waterbury, Conn. | 1320 |
| WATS | Sayre, Pa. | 960 |
| WATT | Cadillac, Mich. | 1240 |
| WATV | Birmingham, Ala. | 900 |
| WATW | Ashland, Wis. | 1400 |
| WATZ | Alpena, Mich. | 1450 |
| WAUB | Auburn, N.Y. | 1590 |
| WAUC | Wauchula, Fla. | 1310 |
| WAUD | Auburn, Ala. | 1230 |
| WAUG | Augusta, Ga. | 1050 |
| WAUX | Waukesha, Wis. | 1510 |
| WAVE | Louisville, Ky. | 970 |
| WAVI | Dayton, Ohio | 1210 |
| WAVL | Apollo, Pa. | 910 |
| WAVN | Stillwater, Minn. | 1220 |
| WAVO | Avondale Estates, Ga. | 1420 |
| WAVP | Avon Park, Fla. | 1390 |
| WAVU | Albertville, Ala. | 630 |
| WAVY | Portsmouth, Va. | 1350 |
| WAVZ | New Haven, Conn. | 1300 |
| WAWA | West Allis, Wis. | 1590 |
| WAWK | Kendallville, Ind. | 1570 |
| WAWZ | Zarephath, N.J. | 1380 |
| WAXE | Vero Beach, Fla. | 1370 |
| WAXU | Georgetown, Ky. | 1580 |
| WAXX | Chippewa Falls, Wis. | 1150 |
| WAYB | Waynesboro, Va. | 1490 |
| WAYE | Dundalk, Md. | 860 |
| WAYN | Rockingham, N.C. | 900 |
| WAYR | Orange Park, Fla. | 550 |
| WAYS | Charlotte, N.C. | 610 |
| WAYX | Waycross, Ga. | 1230 |
| WAYZ | Waynesboro, Pa. | 1380 |
| WAZA | Bainbridge, Ga. | 1360 |
| WAZE | Clearwater, Fla. | 860 |
| WAZF | Yazoo City, Miss. | 1230 |
| WAZL | Hazelton, Pa. | 1490 |
| WAZY | Lafayette, Ind. | 1410 |
| WBAA | West Lafayette, Ind. | 920 |
| WBAB | Babylon, N.Y. | 1440 |
| WBAC | Cleveland, Tenn. | 1340 |
| WBAG | Burlington, N.C. | 1150 |
| WBAL | Baltimore, Md. | 1090 |
| WBAM | Montgomery, Ala. | 740 |
| WBAP | Ft. Worth, Tex. | 570, 820 |
| WBAR | Bartow, Fla. | 1460 |
| WBAT | Marion, Ind. | 1400 |
| WBAW | Barnwell, S.C. | 740 |
| WBAX | Wilkes-Barre, Pa. | 1240 |
| WBAY | Green Bay, Wis. | 1360 |
| WBAZ | Kingston, N.Y. | 1550 |
| WBBA | Pittsfield, Ill. | 1580 |
| WBBB | Burlington, N.C. | 920 |
| WBBF | Rochester, N.Y. | 950 |
| WBBI | Abingdon, Va. | 1230 |
| WBBK | Blakely, Ga. | 1260 |
| WBBL | Richmond, Va. | 1480 |
| WBBM | Chicago, Ill. | 780 |
| WBBO | Forest City, N.C. | 780 |
| WBBQ | Augusta, Ga. | 1340 |
| WBBR | E. St. Louis, Ill. | 1490 |
| WBBT | Lyons, Ga. | 1340 |
| WBBW | Youngstown, Ohio | 1240 |
| WBBX | Portsmouth, N.H. | 1380 |
| WBBY | Wood River, Ill. | 590 |
| WBBZ | Ponca City, Okla. | 1230 |
| WBCA | Bay Minette, Ala. | 1150 |
| WBCB | Levittown, Pa. | 1490 |
| WBCH | Hastings, Mich. | 1220 |
| WBCI | Williamsburg, Va. | 740 |
| WBCK | Battle Creek, Mich. | 930 |
| WBCM | Bay City, Mich. | 1440 |
| WBCR | Christiansburg, Va. | 1260 |
| WBCU | Union, S.C. | 1460 |
| WBEC | Pittsfield, Mass. | 1420 |
| WBEE | Harvey, Ill. | 1570 |
| WBEJ | Elizabethton, Tenn. | 1240 |
| WBEL | South Beloit, Ill. | 1380 |
| WBEN | Buffalo, N.Y. | 930 |
| WBET | Brockton, Mass. | 1460 |
| WBEU | Beaufort, S.C. | 960 |
| WBEV | Beaver Dam, Wis. | 1430 |
| WBEX | Chillicothe, Ohio | 1490 |
| WBFC | Fremont, Mich. | 1490 |
| WBFD | Bedford, Pa. | 1310 |
| WBGC | Chipley, Fla. | 1240 |
| WBGN | Bowling Green, Ky. | 1340 |
| WBGR | Jesup, Ga. | 1370 |
| WBHB | Fitzgerald, Ga. | 1240 |
| WBHC | Hampton, S.C. | 1270 |
| WBHF | Cartersville, Ga. | 1450 |
| WBHM | Birmingham, Ala. | 1550 |
| WBHP | Huntsville, Ala. | 1230 |
| WBIA | Augusta, Ga. | 1230 |
| WBIC | Islip, N.Y. | 540 |
| WBIE | Marietta, Ga. | 1050 |
| WBIG | Greensboro, N.C. | 1470 |
| WBIL | Leesburg, Fla. | 1410 |
| WBIP | Booneville, Miss. | 1400 |
| WBIR | Knoxville, Tenn. | 1240 |
| WBIS | Bristol, Conn. | 1440 |
| WBIW | Bedford, Ind. | 1340 |
| WBIZ | Eau Claire, Wis. | 1400 |
| WBKH | Hattiesburg, Miss. | 950 |
| WBKN | Newton, Miss. | 1410 |
| WBKV | West Bend, Wis. | 1470 |
| WBLA | Elizabethtown, N.C. | 1440 |
| WBLE | Batesville, Miss. | 1290 |
| WBLF | Bellefonte, Pa. | 1330 |
| WBLG | Lexington, Ky. | 1300 |
| WBLJ | Dalton, Ga. | 1230 |
| WBLO | Evergreen, Ala. | 1470 |
| WBLR | Batesburg, S.C. | 1430 |
| WBLT | Bedford, Va. | 1350 |
| WBLU | Salem, Va. | 1480 |
| WBLY | Springfield, Ohio | 1600 |
| WBMA | Beaufort, N.C. | 1400 |
| WBMC | McMinnville, Tenn. | 960 |
| WBMD | Baltimore, Md. | 750 |
| WBMK | West Point, Ga. | 1310 |
| WBML | Macon, Ga. | 1240 |
| WBMT | Black Mountain, N.C. | 1350 |
| WBNB | Charlotte Amalie, Virgin Islands | 1000 |
| WBNC | Conway, N.H. | 1050 |
| WBNL | Boonville, Ind. | 1540 |
| WBNR | Beacon, N.Y. | 1260 |
| WBNS | Columbus, Ohio | 1460 |
| WBNT | Oneida, Tenn. | 1310 |
| WBNX | New York, N.Y. | 1380 |
| WBOB | Galax, Va. | 1360 |
| WBOC | Salisbury, Md. | 960 |
| WBOF | Virginia Beach, Va. | 1550 |
| WBOK | New Orleans, La. | 800 |
| WBOP | Pensacola, Fla. | 980 |
| WBOS | Brookline, Mass. | 1600 |
| WBOW | Terre Haute, Ind. | 1230 |
| WBOY | Clarksburg, W.Va. | 1400 |
| WBPZ | Lock Haven, Pa. | 1230 |
| WBRB | Mt. Clemens, Mich. | 1430 |
| WBRC | Birmingham, Ala. | 960 |
| WBRD | Bradenton, Fla. | 1420 |
| WBRE | Wilkes-Barre, Pa. | 1340 |
| WBRG | Lynchburg, Va. | 1050 |
| WBRK | Pittsfield, Mass. | 1340 |
| WBRM | Marion, N.C. | 1250 |
| WBRN | Big Rapids, Mich. | 1460 |
| WBRO | Waynesboro, Ga. | 1310 |
| WBRT | Bardstown, Ky. | 1320 |
| WBRV | Boonville, N.Y. | 900 |
| WBRX | Berwick, Pa. | 1280 |
| WBRY | Waterbury, Conn. | 1590 |
| WBSA | Boaz, Ala. | 1300 |
| WBSC | Bennetsville, S.C. | 1550 |
| WBSG | Blackshear, Ga. | 1350 |
| WBSM | New Bedford, Mass. | 1420 |
| WBT | Charlotte, N.C. | 1110 |
| WBTA | Batavia, N.Y. | 1490 |
| WBTH | Williamson, W.Va. | 1400 |
| WBTL | Farmville, N.C. | 1050 |
| WBTM | Danville, Va. | 1330 |
| WBTN | Bennington, Vt. | 1370 |
| WBTO | Linton, Ind. | 1600 |
| WBTS | Bridgeport, Ala. | 1480 |
| WBUC | Buckhannon, W.Va. | 1460 |
| WBUD | Trenton, N.J. | 1260 |
| WBUT | Butler, Pa. | 1050 |
| WBUX | Doylestown, Pa. | 1570 |
| WBUY | Lexington, N.C. | 1440 |
| WBUZ | Fredonia, N.Y. | 1570 |
| WBVL | Barbourville, Ky. | 950 |
| WBVM | Utica, N.Y. | 1550 |
| WBVP | Beaver Falls, Pa. | 1230 |
| WBYE | Calera, Ala. | 1370 |
| WBYG | Savannah, Ga. | 1450 |
| WBYS | Canton, Ill. | 1560 |
| WBZ | Boston, Mass. | 1030 |
| WBZA | Springfield, Mass. | 1030 |
| WBZY | Torrington, Conn. | 990 |
| WCAL | Northfield, Minn. | 770 |
| WCAM | Camden, N.J. | 1310 |
| WCAO | Baltimore, Md. | 600 |
| WCAP | Lowell, Mass. | 980 |
| WCAR | Detroit, Mich. | 1130 |
| WCAT | Orange, Mass. | 1390 |
| WCAU | Philadelphia, Pa. | 1210 |
| WCAW | Charleston, W.Va. | 680 |
| WCAX | Burlington, Vt. | 620 |
| WCAY | Cayce, S.C. | 620 |
| WCAZ | Carthage, Ill. | 990 |
| WCBA | Corning, N.Y. | 1350 |
| WCBG | Chambersburg, Pa. | 1590 |
| WCBI | Columbus, Miss. | 550 |
| WCBL | Benton, Ky. | 1290 |
| WCBM | Baltimore, Md. | 680 |
| WCBS | New York, N.Y. | 880 |
| WCBT | Roanoke Rapids, N.C. | 1230 |
| WCBY | Cheboygan, Mich. | 1240 |
| WCCC | Hartford, Conn. | 1290 |
| WCCM | Lawrence, Mass. | 800 |
| WCCN | Neillsville, Wis. | 1370 |
| WCCO | Minneapolis, Minn. | 830 |
| WCCW | Traverse City, Mich. | 1310 |
| WCDL | Carbondale, Pa. | 1440 |
| WCDJ | Edenton, N.C. | 1260 |
| WCDT | Winchester, Tenn. | 1340 |
| WCEC | Rocky Mount, N.C. | 810 |
| WCED | DuBois, Pa. | 1420 |
| WCEF | Parksburg, W.Va. | 1050 |
| WCEH | Hawkinsville, Ga. | 610 |
| WCEM | Cambridge, Md. | 1240 |
| WCEN | Mt. Pleasant, Mich. | 1150 |
| WCER | Charlotte, Mich. | 1390 |
| WCFL | Chicago, Ill. | 1000 |
| WCFR | Springfield, Vt. | 1480 |
| WCFV | Clifton Forge, Va. | 1230 |
| WCGA | Calhoun, Ga. | 900 |
| WCGC | Belmont, N.C. | 1270 |
| WCGO | Chicago Hghts., Ill. | 1600 |
| WCGR | Canandaigua, N.Y. | 1550 |
| WCHA | Chambersburg, Pa. | 800 |
| WCHB | Inkster, Mich. | 1440 |
| WCHI | Chillicothe, Ohio | 1350 |
| WCHJ | Brookhaven, Miss. | 1470 |
| WCHK | Canton, Ga. | 1290 |
| WCHO | Washington Court House, Ohio | 1250 |
| WCHL | Chapel Hill, N.C. | 1360 |
| WCHN | Norwich, N.Y. | 970 |
| WCHS | Charleston, W.Va. | 580 |
| WCHV | Charlottesville, Va. | 1260 |
| WCIL | Carbondale, Ill. | 1020 |
| WCIN | Cincinnati, Ohio | 1480 |
| WCJU | Columbia, Miss. | 1450 |
| WCKB | Dunn, N.C. | 780 |
| WCKI | Greer, S.C. | 1300 |
| WCKM | Winnsboro, S.C. | 1250 |
| WCKR | Miami, Fla. | 610 |
| WCKY | Cincinnati, Ohio | 1530 |
| WCLA | Claxton, Ga. | 1470 |
| WCLB | Camilla, Ga. | 1220 |
| WCLC | Jamestown, Tenn. | 1260 |
| WCLD | Cleveland, Miss. | 1490 |
| WCLE | Cleveland, Tenn. | 1570 |
| WCLG | Morgantown, W.Va. | 1300 |
| WCLI | Corning, N.Y. | 1450 |
| WCLO | Janesville, Wis. | 1230 |
| WCLS | Columbus, Ga. | 1580 |
| WCLT | Newark, Ohio | 1430 |
| WCLW | Mansfield, Ohio | 1570 |
| WCMA | Corinth, Miss. | 1230 |
| WCMB | Harrisburg, Pa. | 1460 |
| WCMC | Wildwood, N.J. | 1230 |
| WCME | Brunswick, Maine | 900 |
| WCMI | Ashland, Ky. | 1340 |
| WCMN | Arecibo, P.R. | 1280 |
| WCMP | Pine City, Minn. | 1350 |
| WCMR | Elkhart, Ind. | 1270 |
| WCMS | Norfolk, Va. | 1050 |
| WCMT | Martin, Tenn. | 1410 |
| WCMY | Ottawa, Ill. | 1430 |
| WCNB | Connersville, Ind. | 1580 |
| WCNC | Elizabeth City, N.C. | 1240 |
| WCNF | Weldon, N.C. | 1400 |
| WCNH | Quincy, Fla. | 1230 |
| WCNL | Newport, N. H. | 1010 |
| WCNR | Bloomsburg, Pa. | 930 |
| WCNT | Centralia, Ill. | 1210 |
| WCNU | Crestview, Fla. | 1010 |
| WCNX | Middletown, Conn. | 1150 |
| WCOA | Pensacola, Fla. | 1370 |
| WCOC | Meridian, Miss. | 910 |
| WCOG | Greensboro, N.C. | 1320 |
| WCOH | Newnan, Ga. | 1400 |
| WCOJ | Coatesville, Pa. | 1420 |
| WCOL | Columbus, Ohio | 1230 |
| WCON | Cornelia, Ga. | 1450 |
| WCOP | Boston, Mass. | 1150 |
| WCOR | Lebanon, Tenn. | 900 |
| WCOS | Columbia, S.C. | 1400 |
| WCOU | Lewiston, Maine | 1240 |
| WCOV | Montgomery, Ala. | 1170 |
| WCOW | Sparta, Wis. | 1290 |
| WCOY | Columbia, Pa. | 1580 |
| WCPA | Clearfield, Pa. | 900 |
| WCPC | Houston, Miss. | 1320 |
| WCPH | Etowah, Tenn. | 1220 |
| WCPM | Cumberland, Ky. | 1280 |
| WCPO | Cincinnati, Ohio | 1230 |
| WCPS | Tarboro, N.C. | 760 |
| WCQS | Alma, Ga. | 1400 |
| WCRA | Effingham, Ill. | 1090 |
| WCRB | Waltham, Mass. | 1330 |
| WCRE | Cheraw, S.C. | 1420 |
| WCRI | Scottsboro, Ala. | 1050 |
| WCRK | Morristown, Tenn. | 1150 |
| WCRL | Oneonta, Ala. | 1570 |
| WCRM | Clare, Mich. | 990 |
| WCRO | Johnstown, Pa. | 1230 |
| WCRR | Corinth, Miss. | 1330 |
| WCRS | Greenwood, S.C. | 1450 |
| WCRT | Birmingham, Ala. | 1260 |
| WCRV | Washington, N.J. | 1580 |
| WCRW | Chicago, Ill. | 1240 |
| WCRY | Macon, Ga. | 900 |
| WCSC | Charleston, S.C. | 1390 |
| WCSH | Portland, Maine | 970 |
| WCSI | Columbus, Ind. | 1010 |
| WCSR | Hillsdale, Mich. | 1340 |
| WCSS | Amsterdam, N.Y. | 1490 |
| WCST | Berkeley Springs, W.Va. | 1010 |
| WCTA | Andalusia, Ala. | 920 |
| WCTC | New Brunswick, N.J. | 1450 |
| WCTT | Corbin, Ky. | 680 |
| WCTW | New Castle, Ind. | 1550 |
| WCUB | Manitowoc, Wis. | 980 |
| WCUE | Cuyahoga Falls, Ohio | 1150 |
| WCUM | Cumberland, Md. | 1230 |
| WCVA | Culpeper, Va. | 1490 |
| WCVI | Connellsville, Pa. | 1340 |
| WCVP | Murphy, N.C. | 600 |
| WCVQ | Kodiak, Alaska | 960 |
| WCVS | Springfield, Ill. | 1450 |
| WCWC | Ripon, Wis. | 1600 |
| WCYB | Bristol, Va. | 690 |
| WCYN | Cynthiana, Ky. | 1400 |
| WDAD | Indiana, Pa. | 1450 |
| WDAE | Tampa, Fla. | 1250 |
| WDAF | Kansas City, Mo. | 610 |
| WDAK | Columbus, Ga. | 540 |
| WDAL | Meridian, Miss. | 1330 |
| WDAN | Danville, Ill. | 1490 |
| WDAR | Darlington, S.C. | 1350 |
| WDAS | Philadelphia, Pa. | 1480 |
| WDAX | McRae, Ga. | 1410 |
| WDAY | Fargo, N. Dak. | 970 |
| WDBC | Escanaba, Mich. | 680 |
| WDBF | Delray Beach, Fla. | 1420 |
| WDBJ | Roanoke, Va. | 960 |
| WDBL | Springfield, Tenn. | 1590 |
| WDBM | Statesville, N.C. | 550 |
| WDBO | Orlando, Fla. | 580 |
| WDBQ | Dubuque, Iowa | 1490 |
| WDCF | Dade City, Fla. | 1350 |
| WDCR | Hanover, N.H. | 1340 |
| WDDT | Greenville, Miss. | 900 |
| WDDW | Halfway, Md. | 1410 |
| WDDY | Gloucester, Va. | 1420 |
| WDEA | Ellsworth, Me. | 1350 |
| WDEB | Pensacola, Fla. | 610 |

| C.L. | Location | Kc. |
|---|---|---|
| WDEC | Americus, Ga. | 1290 |
| WDEE | Hamden, Conn. | 1220 |
| WDEF | Chattanooga, Tenn. | 1370 |
| WDEH | Sweetwater, Tenn. | 800 |
| WDEL | Wilmington, Del. | 1150 |
| WDEV | Waterbury, Vt. | 550 |
| WDEW | Westfield, Mass. | 1570 |
| WDGY | Minneapolis, Minn. | 1130 |
| WDIA | Memphis, Tenn. | 1070 |
| WDIG | Dothan, Ala. | 1450 |
| WDIX | Orangeburg, S.C. | 1150 |
| WDJS | Mt. Olive, N.C. | 1430 |
| WDKD | Kingstree, S.C. | 1310 |
| WDKN | Dickson, Tenn. | 1260 |
| WDLA | Walton, N.Y. | 1270 |
| WDLB | Marshfield, Wis. | 1450 |
| WDLC | Port Jervis, N.Y. | 1490 |
| WDLR | Delaware, Ohio | 1550 |
| WDLM | E. Moline, Ill. | 960 |
| WDLT | Indianola, Miss. | 1380 |
| WDLP | Panama City, Fla. | 590 |
| WDMC | Otsego, Mich. | 980 |
| WDMF | Buford, Ga. | 1460 |
| WDMG | Douglas, Ga. | 860 |
| WDMJ | Marquette, Mich. | 1320 |
| WDMS | Lynchburg, Va. | 1320 |
| WDMV | Pocomoke City, Md. | 540 |
| WDNC | Durham, N.C. | 620 |
| WDNE | Elkins, W.Va. | 1240 |
| WDNG | Anniston, Ala. | 1450 |
| WDNT | Dayton,Tenn. | 1280 |
| WDOB | Canton, Miss. | 1370 |
| WDOC | Prestonsburg, Ky. | 1310 |
| WDOD | Chattanooga, Tenn. | 1310 |
| WDOE | Dunkirk, N.Y. | 1410 |
| WDOG | Marine City, Mich. | 1590 |
| WDOK | Cleveland, Ohio | 1260 |
| WDOL | Athens, Ga. | 1470 |
| WDON | Wheaton, Md. | 1540 |
| WDOR | Sturgeon Bay, Wis. | 910 |
| WDOS | Oneonta, N.Y. | 730 |
| WDOT | Burlington, Va. | 1400 |
| WDOV | Dover, Del. | 1410 |
| WDOW | Dowagiac, Mich. | 1440 |
| WDQN | DuQuoin, Ill. | 1580 |
| WDRC | Hartford, Conn. | 1360 |
| WDSC | Dillon, S.C. | 800 |
| WDSG | Dyersburg, Tenn. | 1450 |
| WDSK | Cleveland, Miss. | 1410 |
| WDSM | Superior, Wis. | 710 |
| WDSP | DeFuniak Springs, Florida | 1280 |
| WDSR | Lake City, Fla. | 1340 |
| WDSU | New Orleans, La. | 1280 |
| WDUN | Gainesville, Ga. | 1240 |
| WDUX | Waupaca, Wis. | 800 |
| WDUZ | Green Bay, Wis. | 1400 |
| WDVA | Danville, Va. | 1250 |
| WDVH | Gainesville, Fla. | 980 |
| WDVL | Vineland, N.J. | 1270 |
| WDWD | Dawson, Ga. | 990 |
| WDWS | Champaign, Ill. | 1400 |
| WDXB | Chattanooga, Tenn. | 1490 |
| WDXE | Lawrenceburg, Tenn. | 1370 |
| WDXI | Jackson, Tenn. | 1310 |
| WDXL | Lexington, Tenn. | 1490 |
| WDXN | Clarksville, Tenn. | 540 |
| WDXR | Paducah, Ky. | 1560 |
| WDXY | Sumter, S.C. | 1240 |
| WDZ | Decatur, Ill. | 1050 |
| WEAB | Greer, S.C. | 800 |
| WEAG | Alcoa, Tenn. | 1470 |
| WEAM | Arlington, Va. | 1390 |
| WEAN | Providence, R.I. | 790 |
| WEAQ | Eau Claire, Wis. | 790 |
| WEAS | College Park, Ga. | 1570 |
| WEAT | W. Palm Beach, Fla. | 850 |
| WEAV | Plattsburg, N.Y. | 960 |
| WEAW | Evanston, Ill. | 1330 |
| WEBB | Baltimore, Md. | 1360 |
| WEBC | Duluth, Minn. | 560 |
| WEBJ | Brewton, Ala. | 1240 |
| WEBO | Owego, N.Y. | 1330 |
| WEBQ | Harrisburg, Ill. | 1240 |
| WEBR | Buffalo, N.Y. | 970 |
| WEBY | Milton, Fla. | 1330 |
| WECL | Eau Claire, Wis. | 1050 |
| WEDC | Chicago, Ill. | 1240 |
| WEDO | McKeesport, Pa. | 810 |
| WEEB | Southern Pines, N.C. | 990 |
| WEED | Rocky Mount, N.C. | 1390 |
| WEEE | Rensselaer, N.Y. | 1300 |
| WEEI | Boston, Mass. | 590 |
| WEEL | Fairfax, Va. | 1310 |
| WEEN | Lafayette, Tenn. | 1460 |
| WEER | Warrenton, Va. | 1570 |
| WEET | Richmond, Va. | 1320 |
| WEEU | Reading, Pa. | 850 |
| WEEW | Washington, N.C. | 1320 |
| WEEX | Easton, Pa. | 1230 |
| WEEZ | Chester, Pa. | 1590 |
| WEGO | Concord, N.C. | 1410 |
| WEGP | Presque Isle, Maine | 1390 |
| WEHH | Elmira Heights-Horseheads, N. Y. | 1590 |
| WEIC | Charleston, Ill. | 1270 |
| WEIM | Fitchburg, Mass. | 1280 |
| WEIR | Weirton, W.Va. | 1430 |
| WEIS | Center, Ala. | 990 |
| WEJL | Scranton, Pa. | 630 |
| WEKR | Fayetteville, Tenn. | 1240 |
| WEKY | Richmond, Ky. | 1340 |
| WEKZ | Monroe, Wis. | 1260 |
| WELB | Elba, Ala. | 1350 |
| WELC | Welch, W.Va. | 1150 |
| WELD | Fisher, W.Va. | 690 |

| C.L. | Location | Kc. |
|---|---|---|
| WELE | S. Daytona, Fla. | 1590 |
| WELI | New Haven, Conn. | 960 |
| WELK | Charlottesville, Va. | 1010 |
| WELL | Battle Creek, Mich. | 1400 |
| WELM | Elmira, N.Y. | 1410 |
| WELO | Tupelo, Miss. | 580 |
| WELP | Easley, S.C. | 1360 |
| WELR | Roanoke, Ala. | 1360 |
| WELS | Kinston, N.C. | 1010 |
| WELY | Ely, Minn. | 1450 |
| WELZ | Belzoni, Miss. | 1460 |
| WEMB | Erwin, Tenn. | 1420 |
| WEMD | Easton, Md. | 1460 |
| WEMJ | Laconia, N.H. | 1490 |
| WEMP | Milwaukee, Wis. | 1250 |
| WENA | Bayamon, P.R. | 1560 |
| WENC | Whiteville, N.C. | 1220 |
| WEND | Edensburg, Pa. | 1580 |
| WENE | Endicott, N.Y. | 1430 |
| WENK | Union City, Tenn. | 1240 |
| WENN | Birmingham, Ala. | 1320 |
| WENO | Madison, Tenn. | 1430 |
| WENT | Gloversville, N.Y. | 1340 |
| WENY | Elmira, N.Y. | 1230 |
| WEOK | Poughkeepsie, N.Y. | 1390 |
| WEOL | Elyria, Ohio | 930 |
| WEPG | S. Pittsburgh, Tenn. | 910 |
| WEPM | Martinsburg, W.Va. | 1340 |
| WERA | Plainfield, N.J. | 1590 |
| WERD | Atlanta, Ga. | 860 |
| WERE | Cleveland, Ohio | 1300 |
| WERH | Hamilton, Ala. | 970 |
| WERI | Westerly, R.I. | 1230 |
| WERL | Eagle River, Wis. | 950 |
| WERT | Van Wert, Ohio | 1220 |
| WESA | Charleroi, Pa. | 940 |
| WESB | Bradford, Pa. | 1490 |
| WESC | Greenville, S.C. | 660 |
| WESN | N. Augusta, S.C. | 1550 |
| WESO | Southbridge, Mass. | 970 |
| WESR | Tasley, Va. | 1330 |
| WEST | Easton, Pa. | 1400 |
| WESX | Salem, Mass. | 1230 |
| WESY | Leland, Miss. | 1580 |
| WETB | Johnson City, Tenn. | 790 |
| WETC | Wendell-Zebulon, N.C. | 540 |
| WETH | St. Augustine, Fla. | 1420 |
| WETO | Gadsden, Ala. | 930 |
| WETT | Ocean City, Md. | 1590 |
| WETU | Wetumpka, Ala. | 1250 |
| WETZ | New Martinsville, West Virginia | 1330 |
| WEUC | Ponce, P.R. | 1420 |
| WEUP | Huntsville, Ala. | 1600 |
| WEVA | Emporia, Va. | 860 |
| WEVD | New York, N.Y. | 1330 |
| WEVE | Eveleth, Minn. | 1340 |
| WEW | St. Louis, Mo. | 770 |
| WEWO | Laurinburg, N.C. | 1080 |
| WEXL | Royal Oak, Mich. | 1340 |
| WEYE | Sanford, N.C. | 1290 |
| WEZB | Birmingham, Ala. | 1220 |
| WEZE | Boston, Mass. | 1260 |
| WEZJ | Williamsburg, Ky. | 1440 |
| WEZN | Elizabethtown, Pa. | 1600 |
| WEZY | Cocoa, Fla. | 1350 |
| WFAA | Dallas, Tex. | 570, 820 |
| WFAB | Miami, Fla. | 990 |
| WFAG | Farmville, N.C. | 1250 |
| WFAH | Alliance, Ohio | 1310 |
| WFAI | Fayetteville, N.C. | 1230 |
| WFAR | Farrell, Pa. | 1470 |
| WFAS | White Plains, N.Y. | 1230 |
| WFAU | Augusta, Me. | 1340 |
| WFAX | Falls Church, Va. | 1220 |
| WFBC | Greenville, S.C. | 1330 |
| WFBG | Altoona, Pa. | 1290 |
| WFBL | Syracuse, N.Y. | 1390 |
| WFBM | Indianapolis, Ind. | 1260 |
| WFBR | Baltimore, Md. | 1300 |
| WFCT | Fountain City, Tenn. | 1430 |
| WFDF | Flint, Mich. | 910 |
| WFDR | Manchester, Ga. | 1370 |
| WFEA | Manchester, N.Y. | 1370 |
| WFEB | Sylacauga, Ala. | 1340 |
| WFEC | Miami, Fla. | 1220 |
| WFFF | Columbia, Miss. | 1600 |
| WFFG | Marathon, Fla. | 1300 |
| WFGM | Fitchburg, Mass. | 960 |
| WFGN | Gaffney, S.C. | 1570 |
| WFHG | Bristol, Va. | 980 |
| WFHK | Pell City, Ala. | 1430 |
| WFHR | Wis. Rapids, Wis. | 1320 |
| WFIG | Sumter, S.C. | 1290 |
| WFIL | Philadelphia, Pa. | 560 |
| WFIN | Findlay, Ohio | 1330 |
| WFIS | Fountain Inn, S.C. | 1600 |
| WFIW | Fairfield, Ill. | 1390 |
| WFKN | Franklin, Ky. | 1220 |
| WFKY | Frankfort, Ky. | 1490 |
| WFLA | Tampa, Fla. | 970 |
| WFLB | Fayetteville, N.C. | 1490 |
| WFLI | Lookout Mtn., Tenn. | 1070 |
| WFLN | Philadelphia, Pa. | 900 |
| WFLO | Farmville, Va. | 870 |
| WFLR | Dundee, N.Y. | 1570 |
| WFLS | Fredericksburg, Va. | 1350 |
| WFLW | Monticello, Ky. | 1360 |
| WFMC | Goldsboro, N.C. | 730 |
| WFMD | Frederick, Md. | 930 |
| WFMH | Cullman, Ala. | 1460 |
| WFMJ | Youngstown, Ohio | 1390 |
| WFMO | Fairmont, N.C. | 860 |
| WFMW | Madisonville, Ky. | 730 |
| WFNC | Fayetteville, N.C. | 1390 |
| WFOB | Fostoria, Ohio | 1430 |
| WFOM | Marietta, Ga. | 1230 |
| WFOR | Hattiesburg, Miss. | 1400 |
| WFOX | Milwaukee, Wis. | 860 |

| C.L. | Location | Kc. |
|---|---|---|
| WFOY | St. Augustine, Fla. | 1240 |
| WFPA | Fort Payne, Ala. | 1400 |
| WFPG | Atlantic City, N.J. | 1450 |
| WFPM | Fort Valley, Ga. | 1150 |
| WFPR | Hammond, La. | 1400 |
| WFRA | Franklin, Pa. | 1430 |
| WFRB | Frostburg, Md. | 740 |
| WFRC | Reidsville, N.C. | 1600 |
| WFRL | Freeport, Ill. | 1570 |
| WFRM | Coudersport, Pa. | 600 |
| WFRO | Fremont, Ohio | 900 |
| WFRX | West Frankfort, Ill. | 1300 |
| WFSC | Franklin, N.C. | 1050 |
| WFST | Caribou, Maine | 600 |
| WFTC | Kinston, N.C. | 960 |
| WFTG | London, Ky. | 1400 |
| WFTL | Ft. Lauderdale, Fla. | 1400 |
| WFTM | Maysville, Ky. | 1240 |
| WFTR | Front Royal, Va. | 1450 |
| WFTW | Ft. Walton Beach, Florida | 1260 |
| WFUL | Fulton, Ky. | 1270 |
| WFUN | Huntsville, Ala. | 1450 |
| WFUR | Grand Rapids, Mich. | 1570 |
| WFVA | Fredericksburg, Va. | 1230 |
| WFVG | Fuquay Sprgs., N.C. | 1460 |
| WFWL | Camden, Tenn. | 1220 |
| WFYC | Alma, Mich. | 1280 |
| WFYI | Mineola, N.Y. | 1520 |
| WGAA | Cedartown, Ga. | 1340 |
| WGAC | Augusta, Ga. | 580 |
| WGAD | Gadsden, Ala. | 1350 |
| WGAF | Valdosta, Ga. | 910 |
| WGAI | Elizabeth City, N.C. | 560 |
| WGAL | Lancaster, Pa. | 1490 |
| WGAN | Portland, Maine | 560 |
| WGAP | Maryville, Tenn. | 1400 |
| WGAR | Cleveland, Ohio | 1220 |
| WGAS | S. Gastonia, N.C. | 1420 |
| WGAT | Gate City, Va. | 1050 |
| WGAU | Athens, Ga. | 1340 |
| WGAW | Gardner, Mass. | 1340 |
| WGBA | Columbus, Ga. | 1270 |
| WGBB | Freeport, N.Y. | 1240 |
| WGBF | Evansville, Ind. | 1280 |
| WGBG | Greensboro, N.C. | 1400 |
| WGBI | Scranton, Pa. | 910 |
| WGBR | Goldsboro, N. C. | 1150 |
| WGBS | Miami, Fla. | 710 |
| WGCB | Red Lion, Pa. | 1440 |
| WGCD | Chester, S.C. | 1490 |
| WGCM | Gulfport, Miss. | 1240 |
| WGEA | Geneva, Ala. | 1150 |
| WGEE | Indianapolis, Ind. | 1590 |
| WGEM | Quincy, Ill. | 1440 |
| WGES | Chicago, Ill. | 1390 |
| WGET | Gettysburg, Pa. | 1320 |
| WGEZ | Beloit, Wis. | 1490 |
| WGFA | Watseka, Ill. | 1360 |
| WGFS | Covington, Ga. | 1430 |
| WGGA | Gainesville, Ga. | 550 |
| WGGG | Gainesville, Fla. | 1230 |
| WGGH | Marion, Ill. | 1150 |
| WGGO | Salamanca, N.Y. | 1590 |
| WGH | Newport News, Va. | 1310 |
| WGHC | Clayton, Ga. | 1570 |
| WGHM | Skowegan, Maine | 1150 |
| WGHN | Grd. Haven, Mich. | 1370 |
| WGHO | Kingston, N.Y. | 920 |
| WGIG | Brunswick, Ga. | 1440 |
| WGIL | Galesburg, Ill. | 1400 |
| WGIR | Manchester, N.H. | 610 |
| WGIV | Charlotte, N.C. | 1600 |
| WGKA | Atlanta, Ga. | 1600 |
| WGL | Fort Wayne, Ind. | 1250 |
| WGLC | Centreville, Miss. | 1580 |
| WGLI | Babylon, N.Y. | 1290 |
| WGMA | Hollywood, Fla. | 1320 |
| WGML | Hinesville, Ga. | 990 |
| WGMM | Millington, Tenn. | 1380 |
| WGMS | Washington, D.C. | 570 |
| WGN | Chicago, Ill. | 720 |
| WGNC | Gastonia, N.C. | 1450 |
| WGNI | Wilmington, N.C. | 1450 |
| WGNS | Murfreesboro, Tenn. | 1450 |
| WGNO | Granite City, Ill. | 920 |
| WGNY | Newburgh, N.Y. | 1220 |
| WGOG | Walhalla, S.C. | 1460 |
| WGOH | Grayson, Ky. | 1370 |
| WGOK | Mobile, Ala. | 900 |
| WGOL | Goldsboro, N.C. | 1300 |
| WGOV | Valdosta, Ga. | 950 |
| WGPA | Bethlehem, Pa. | 1100 |
| WGPC | Albany, Ga. | 1450 |
| WGR | Buffalo, N.Y. | 550 |
| WGRA | Cairo, Ga. | 790 |
| WGRC | Green Cove Springs, Florida | 1580 |
| WGRD | Grand Rapids, Mich. | 1410 |
| WGRF | Aguadella, P.R. | 1340 |
| WGRM | Greenwood, Miss. | 1240 |
| WGRO | Lake City, Fla. | 960 |
| WGRP | Greenville, Pa. | 940 |
| WGRV | Greeneville, Tenn. | 1340 |
| WGRY | Gary, Ind. | 1370 |
| WGSA | Ephrata, Pa. | 1310 |
| WGSB | Geneva, Ill. | 1480 |
| WGSM | Huntington, N.Y. | 740 |
| WGSR | Millen, Ga. | 1570 |
| WGST | Atlanta, Ga. | 920 |
| WGSV | Guntersville, Ala. | 1270 |
| WGSW | Greenwood, S.C. | 1350 |
| WGTA | Summerville, Ga. | 930 |
| WGTC | Greenville, N.C. | 1590 |
| WGTL | Kannapolis, N.C. | 870 |
| WGTM | Wilson, N.C. | 590 |
| WGTN | Georgetown, S.C. | 1400 |
| WGTO | Cypress Gardens, Fla. | 540 |
| WGUN | Decatur, Ga. | 1010 |

| C.L. | Location | Kc. |
|---|---|---|
| WGUS | North Augusta, S.C. | 1380 |
| WGUY | Bangor, Maine | 1250 |
| WGVA | Geneva, N.Y. | 1240 |
| WGVM | Greenville, Miss. | 1260 |
| WGWC | Selma, Ala. | 1340 |
| WGWR | Asheboro, N.C. | 1260 |
| WGY | Schenectady, N.Y. | 810 |
| WGYV | Greenville, Ala. | 1380 |
| WHA | Madison, Wis. | 970 |
| WHAB | Baxley, Ga. | 1260 |
| WHAI | Greenfield, Mass. | 1240 |
| WHAK | Rogers City, Mich. | 960 |
| WHAL | Shelbyville, Tenn. | 1400 |
| WHAM | Rochester, N.Y. | 1180 |
| WHAN | Haines City, Fla. | 930 |
| WHAP | Hopewell, Va. | 1340 |
| WHAR | Clarksburg, W.Va. | 1340 |
| WHAS | Louisville, Ky. | 840 |
| WHAT | Philadelphia, Pa. | 1340 |
| WHAV | Haverhill, Mass. | 1490 |
| WHAW | Weston, W.Va. | 980 |
| WHAY | New Britain, Conn. | 910 |
| WHAZ | Troy, N.Y. | 1330 |
| WHB | Kansas City, Mo. | 710 |
| WHBB | Selma, Ala. | 1490 |
| WHBC | Canton, Ohio | 1480 |
| WHBF | Rock Island, Ill. | 1270 |
| WHBG | Harrisonburg, Va. | 1360 |
| WHBI | Newark, N.J. | 1280 |
| WHBL | Sheboygan, Wis. | 1330 |
| WHBN | Harrodsburg, Ky. | 1420 |
| WHBO | Tampa, Fla. | 1050 |
| WHBQ | Memphis, Tenn. | 560 |
| WHBT | Harriman, Tenn. | 1600 |
| WHBU | Anderson, Ind. | 1240 |
| WHBY | Appleton, Wis. | 1230 |
| WHCC | Waynesville, N.C. | 1400 |
| WHCO | Sparta, Ill. | 1230 |
| WHCU | Ithaca, N.Y. | 870 |
| WHDF | Houghton, Mich. | 1400 |
| WHDH | Boston, Mass. | 850 |
| WHDL | Olean, N.Y. | 1450 |
| WHDM | McKenzie, Tenn. | 1440 |
| WHEB | Portsmouth, N.H. | 750 |
| WHEC | Rochester, N.Y. | 1460 |
| WHEE | Martinsville, Va. | 1370 |
| WHEN | Syracuse, N.Y. | 620 |
| WHEO | Stuart, Va. | 1270 |
| WHEP | Foley, Ala. | 1310 |
| WHER | Memphis, Tenn. | 1430 |
| WHEW | Riveria Beach, Fla. | 1600 |
| WHEY | Millington, Tenn. | 1220 |
| WHFB | Benton Harbor, Mich. | 1060 |
| WHFC | Cicero, Ill. | 1450 |
| WHGB | Harrisburg, Pa. | 1400 |
| WHGR | Houghton L., Mich. | 1290 |
| WHHH | Warren, Ohio | 1440 |
| WHHT | Lucedale, Miss. | 1440 |
| WHHV | Hillsville, Va. | 1400 |
| WHHY | Montgomery, Ala. | 1440 |
| WHHM | Memphis, Tenn. | 1340 |
| WHIE | Griffin, Ga. | 1320 |
| WHIH | Portsmouth, Va. | 1400 |
| WHIL | Medford, Mass. | 1430 |
| WHIM | E. Providence, R.I. | 1110 |
| WHIN | Gallatin, Tenn. | 1010 |
| WHIO | Dayton, Ohio | 1290 |
| WHIP | Mooresville, N.C. | 1350 |
| WHIR | Danville, Ky. | 1230 |
| WHIS | Bluefield, W.Va. | 1440 |
| WHIT | New Bern, N.C. | 1450 |
| WHIY | Orlando, Fla. | 1270 |
| WHIZ | Zanesville, Ohio | 1240 |
| WHJB | Greensburg, Pa. | 620 |
| WHJC | Matawan, W.Va. | 1360 |
| WHK | Cleveland, Ohio | 1420 |
| WHKP | Hendersonville, N.C. | 1450 |
| WHKY | Hickory, N.C. | 1290 |
| WHLB | Virginia, Minn. | 1400 |
| WHLD | Niagara Falls, N.Y. | 1270 |
| WHLF | South Boston, Va. | 1400 |
| WHLI | Hempstead, N.Y. | 1100 |
| WHLL | Wheeling, W.Va. | 1600 |
| WHLM | Bloomsburg, Pa. | 550 |
| WHLN | Harlan, Ky. | 1410 |
| WHLO | Akron, Ohio | 640 |
| WHLP | Centerville, Tenn. | 1570 |
| WHLS | Port Huron, Mich. | 1450 |
| WHLT | Huntington, Ind. | 1300 |
| WHMA | Anniston, Ala. | 1390 |
| WHMC | Gaithersburg, Md. | 1150 |
| WHMI | Howell, Mich. | 1350 |
| WHMP | Northampton, Mass. | 1400 |
| WHN | New York, N.Y. | 1050 |
| WHNC | Henderson, N.C. | 890 |
| WHNY | McComb, Miss. | 1250 |
| WHO | Des Moines, Iowa | 1040 |
| WHOA | San Juan, P.R. | 870 |
| WHOC | Philadelphia, Miss. | 1490 |
| WHOF | Canton, Ohio | 1060 |
| WHOK | Lancaster, Ohio | 1320 |
| WHOL | Allentown, Pa. | 600 |
| WHOM | New York, N.Y. | 1480 |
| WHOO | Orlando, Fla. | 990 |
| WHOP | Hopkinsville, Ky. | 1230 |
| WHOS | Decatur, Ala. | 800 |
| WHOT | Campbell, Ohio | 1330 |
| WHOU | Houlton, Maine | 1340 |
| WHOW | Clinton, Ill. | 1520 |
| WHP | Harrisburg, Pa. | 580 |
| WHPB | Belton, S.C. | 1390 |
| WHPE | High Point, N.C. | 1070 |
| WHRT | Hartselle, Ala. | 860 |
| WHRV | Ann Arbor, Mich. | 1600 |
| WHSC | Hartsville, S.C. | 1450 |
| WHSM | Hayward, Wis. | 910 |
| WHSY | Hattiesburg, Miss. | 1230 |
| WHTC | Holland, Mich. | 1450 |

| C.L. | Location | Kc. |
|---|---|---|
| WHTG | Eatontown, N.J. | 1410 |
| WHUB | Cookeville, Tenn. | 1400 |
| WHUC | Hudson, N.Y. | 1230 |
| WHUM | Reading, Pa. | 1240 |
| WHUN | Huntington, Pa. | 1150 |
| WHUT | Anderson, Ind. | 1470 |
| WHVF | Wausau, Wis. | 1230 |
| WHVH | Henderson, N.C. | 1450 |
| WHVR | Hanover, Pa. | 1280 |
| WHWB | Rutland, Vt. | 1000 |
| WHWH | Princeton, N.J. | 1350 |
| WHYE | Roanoke, Va. | 910 |
| WHYL | Carlisle, Pa. | 960 |
| WHYN | Springfield, Mass. | 560 |
| WIAC | San Juan, P.R. | 740 |
| WIAM | Williamston, N.C. | 900 |
| WIBA | Madison, Wis. | 1310 |
| WIBB | Macon, Ga. | 1280 |
| WIBC | Indianapolis, Ind. | 1070 |
| WIBG | Philadelphia, Pa. | 990 |
| WIBM | Jackson, Mich. | 1450 |
| WIBR | Baton Rouge, La. | 1300 |
| WIBU | Poynette, Wis. | 1240 |
| WIBV | Belleville, Ill. | 1260 |
| WIBW | Topeka, Kans. | 580 |
| WIBX | Utica, N.Y. | 950 |
| WICC | Bridgeport, Conn. | 600 |
| WICE | Providence, R.I. | 1290 |
| WICH | Norwich, Conn. | 1310 |
| WICK | Scranton, Pa. | 1400 |
| WICO | Salisbury, Md. | 1320 |
| WICU | Erie, Pa. | 1330 |
| WICY | Malone, N.Y. | 1490 |
| WIDE | Biddeford, Maine | 1400 |
| WIDU | Fayetteville, N.C. | 1600 |
| WIEL | Elizabethtown, Ky. | 1400 |
| WIFM | Elkin, N.C. | 1540 |
| WIGL | Superior, Wis. | 970 |
| WIGM | Medford, Wis. | 1490 |
| WIIN | Atlanta, Ga. | 970 |
| WIKB | Iron River, Mich. | 1230 |
| WIKC | Bogalusa, La. | 1490 |
| WIKE | Newport, Vt. | 1490 |
| WIKY | Evansville, Ind. | 820 |
| WIL | St. Louis, Mo. | 1430 |
| WILA | Danville, Va. | 1580 |
| WILD | Boston, Mass. | 1090 |
| WILE | Cambridge, Ohio | 1270 |
| WILI | Willimantic, Conn. | 1400 |
| WILK | Wilkes-Barre, Pa. | 980 |
| WILL | Urbana, Ill. | 580 |
| WILM | Wilmington, Del. | 1450 |
| WILO | Frankfort, Ind. | 1570 |
| WILS | Lansing, Mich. | 1320 |
| WILZ | St. Petersburg Beach, Florida | 1590 |
| WIMA | Lima, Ohio | 1150 |
| WIMO | Winder, Ga. | 1300 |
| WIMS | Michigan City, Ind. | 1420 |
| WINA | Charlottesville, Va. | 1400 |
| WINC | Winchester, Va. | 1400 |
| WIND | Chicago, Ill. | 560 |
| WINF | Manchester, Conn. | 1230 |
| WING | Dayton, Ohio | 1410 |
| WINI | Murphysboro, Ill. | 1420 |
| WINK | Fort Myers, Fla. | 1240 |
| WINN | Louisville, Ky. | 1240 |
| WINQ | Tampa, Fla. | 1010 |
| WINR | Binghamton, N.Y. | 680 |
| WINS | New York, N.Y. | 1010 |
| WINT | Winter Haven, Fla. | 1360 |
| WINX | Rockville, Md. | 1600 |
| WINY | Putnam, Conn. | 1350 |
| WINZ | Miami, Fla. | 940 |
| WIOI | New Boston, Ohio | 1010 |
| WIOK | Normal, Ill. | 1440 |
| WION | Ionia, Mich. | 1430 |
| WIOS | Tawas City, Mich. | 1480 |
| WIOU | Kokomo, Ind. | 1350 |
| WIP | Philadelphia, Pa. | 610 |
| WIPC | Lake Wales, Fla. | 1280 |
| WIPR | San Juan, P.R. | 940 |
| WIPS | Ticonderoga, N.Y. | 1250 |
| WIRA | Fort Pierce, Fla. | 1400 |
| WIRB | Enterprise, Ala. | 600 |
| WIRC | Hickory, N.C. | 630 |
| WIRD | Lake Placid, N.Y. | 920 |
| WIRE | Indianapolis, Ind. | 1430 |
| WIRJ | Humboldt, Tenn. | 740 |
| WIRK | W. Palm Beach, Fla. | 1290 |
| WIRL | Peoria, Ill. | 1290 |
| WIRO | Ironton, Ohio | 1230 |
| WIRV | Irvine, Ky. | 1550 |
| WIRY | Plattsburg, N.Y. | 1340 |
| WIS | Columbia, S.C. | 560 |
| WISA | Isabella, P.R. | 1390 |
| WISE | Asheville, N.C. | 1310 |
| WISH | Indianapolis, Ind. | 1310 |
| WISL | Shamokin, Pa. | 1480 |
| WISM | Madison, Wis. | 1480 |
| WISN | Milwaukee, Wis. | 1150 |
| WISO | Ponce, P.R. | 1260 |
| WISP | Kinston, N.C. | 1230 |
| WISR | Butler, Pa. | 680 |
| WIST | Charlotte, N.C. | 1240 |
| WISV | Viroqua, Wis. | 1360 |
| WITA | San Juan, P.R. | 1140 |
| WITE | Brazil, Ind. | 1380 |
| WITH | Baltimore, Md. | 1230 |
| WITT | Lewisburg, Pa. | 1010 |
| WITW | Washington, N.C. | 930 |
| WITY | Danville, Ill. | 980 |
| WITZ | Jasper, Ind. | 990 |
| WIVE | Ashland, Va. | 1430 |
| WIVI | Christiansted, V.I. | 970 |
| WIVK | Knoxville, Tenn. | 860 |
| WIVV | Vieques, P.R. | 1370 |
| WIVY | Jacksonville, Fla. | 1050 |
| WIXK | New Richmond, Wis. | 1590 |
| WIXN | Dixon, Ill. | 1460 |
| WIZE | Springfield, Ohio | 1340 |
| WIZR | Johnstown, N.Y. | 930 |
| WIZZ | Streator, Ill. | 1250 |
| WJAB | Westbrook, Me. | 1440 |
| WJAC | Johnstown, Pa. | 850 |
| WJAG | Norfolk, Nebr. | 780 |
| WJAK | Jackson, Tenn. | 1460 |
| WJAM | Marion, Ala. | 1310 |
| WJAN | Ishpeming, Mich. | 970 |
| WJAR | Providence, R.I. | 920 |
| WJAS | Pittsburgh, Pa. | 1320 |
| WJAT | Swainsboro, Ga. | 800 |
| WJAX | Jacksonville, Fla. | 930 |
| WJAY | Mullins, S.C. | 1280 |
| WJAZ | Albany, Ga. | 960 |
| WJBB | Haleyville, Ala. | 1230 |
| WJBC | Bloomington, Ill. | 1230 |
| WJBD | Salem, Ill. | 1350 |
| WJBK | Detroit, Mich. | 1500 |
| WJBL | Holland, Mich. | 1260 |
| WJBM | Jerseyville, Ill. | 1480 |
| WJBO | Baton Rouge, La. | 1150 |
| WJBS | DeLand, Fla. | 1490 |
| WJBT | Wheeling, W.Va. | 1470 |
| WJBW | New Orleans, La. | 1230 |
| WJCD | Seymour, Ind. | 1390 |
| WJCM | Sebring, Fla. | 960 |
| WJCW | Johnson City, Tenn. | 910 |
| WJDA | Quincy, Mass. | 1300 |
| WJDB | Thomasville, Ala. | 630 |
| WJDX | Jackson, Miss. | 620 |
| WJDY | Salisbury, Md. | 1470 |
| WJEF | Grand Rapids, Mich. | 1230 |
| WJEH | Gallipolis, Ohio | 990 |
| WJEJ | Hagerstown, Md. | 1240 |
| WJEM | Valdosta, Ga. | 1150 |
| WJER | Dover, Ohio | 1450 |
| WJES | Johnston, S.C. | 1570 |
| WJET | Erie, Pa. | 1400 |
| WJFC | Jefferson City, Tenn. | 1480 |
| WJHB | Talladega, Ala. | 1580 |
| WJHO | Opelika, Ala. | 1400 |
| WJIG | Tullahoma, Tenn. | 740 |
| WJIL | Jacksonville, Ill. | 1550 |
| WJIM | Lansing, Mich. | 1240 |
| WJIV | Savannah, Ga. | 900 |
| WJJC | Commerce, Ga. | 1270 |
| WJJD | Chicago, Ill. | 1160 |
| WJJL | Niagara Falls, N.Y. | 1440 |
| WJJM | Lewisburg, Tenn. | 1490 |
| WJLB | Detroit, Mich. | 1400 |
| WJLD | Homewood, Ala. | 1400 |
| WJLK | Asbury Park, N.J. | 1310 |
| WJLS | Beckley, W.Va. | 560 |
| WJMA | Orange, Va. | 1340 |
| WJMB | Brookhaven, Miss. | 1340 |
| WJMC | Rice Lake, Wis. | 1240 |
| WJMJ | Philadelphia, Pa. | 1540 |
| WJMO | Cleveland Hgts., Ohio | 1490 |
| WJMR | New Orleans, La. | 990 |
| WJMS | Ironwood, Mich. | 630 |
| WJMW | Athens, Ala. | 730 |
| WJMX | Florence, S.C. | 970 |
| WJNC | Jacksonville, N.C. | 1240 |
| WJNO | W. Palm Beach, Fla. | 1230 |
| WJOB | Hammond, Ind. | 1230 |
| WJOE | Ward Ridge, Fla. | 1570 |
| WJOI | Florence, Ala. | 1340 |
| WJOL | Joliet, Ill. | 1340 |
| WJON | St. Cloud, Minn. | 1240 |
| WJOR | South Haven, Mich. | 940 |
| WJOT | Lake City, S.C. | 1260 |
| WJOY | Burlington, Vt. | 1230 |
| WJPA | Washington, Pa. | 1450 |
| WJPD | Ishpeming, Mich. | 1240 |
| WJPF | Herrin, Ill. | 1340 |
| WJPG | Green Bay, Wis. | 1440 |
| WJPR | Greenville, Miss. | 1330 |
| WJPS | Evansville, Ind. | 1330 |
| WJQS | Jackson, Miss. | 1400 |
| WJR | Detroit, Mich. | 760 |
| WJRD | Tuscaloosa, Ala. | 1150 |
| WJRI | Lenoir, N.C. | 1340 |
| WJRL | Rockford, Ill. | 1150 |
| WJRM | Troy, N.C. | 1390 |
| WJRZ | Newark, N.J. | 970 |
| WJSB | Crestview, Fla. | 1050 |
| WJSO | Jonesboro, Tenn. | 1590 |
| WJTN | Jamestown, N.Y. | 1240 |
| WJUD | St. Johns, Mich. | 1580 |
| WJUN | Mexico, Pa. | 1220 |
| WJVA | South Bend, Ind. | 1580 |
| WJW | Cleveland, Ohio | 850 |
| WJWL | Georgetown, Del. | 900 |
| WJWS | South Hill, Va. | 1370 |
| WJXN | Jackson, Miss. | 1450 |
| WJZM | Clarksville, Tenn. | 1400 |
| WKAI | Macomb, Ill. | 1510 |
| WKAL | Rome, N.Y. | 1450 |
| WKAM | Goshen, Ind. | 1460 |
| WKAN | Kankakee, Ill. | 1320 |
| WKAP | Allentown, Pa. | 1320 |
| WKAQ | San Juan, P.R. | 580 |
| WKAR | East Lansing, Mich. | 870 |
| WKAT | Miami Beach, Fla. | 1360 |
| WKAY | Glasgow, Ky. | 1490 |
| WKAZ | Charleston, W.Va. | 950 |
| WKBC | N. Wilkesboro, N.C. | 810 |
| WKBH | La Crosse, Wis. | 1410 |
| WKBI | St. Mary's, Pa. | 1400 |
| WKBJ | Milan, Tenn. | 1600 |
| WKBK | Keene, N.H. | 1220 |
| WKBL | Covington, Tenn. | 1250 |
| WKBN | Youngstown, Ohio | 570 |
| WKBO | Harrisburg, Pa. | 1230 |
| WKBR | Manchester, N.H. | 1250 |
| WKBV | Richmond, Ind. | 1490 |
| WKBW | Buffalo, N.Y. | 1520 |
| WKBX | Kissimmee, Fla. | 1220 |
| WKBZ | Muskegon, Mich. | 850 |
| WKCT | Bowling Green, Ky. | 930 |
| WKCW | Warrenton, Va. | 1420 |
| WKDA | Nashville, Tenn. | 1240 |
| WKDE | Altavista, Va. | 1280 |
| WKDK | Newberry, S.C. | 1240 |
| WKDL | Clarksdale, Miss. | 1600 |
| WKDN | Camden, N.J. | 800 |
| WKDX | Hamlet, N.C. | 1400 |
| WKEE | Huntington, W. Va. | 800 |
| WKEI | Kewanee, Ill. | 1450 |
| WKEN | Dover, Del. | 1600 |
| WKEU | Griffin, Ga. | 1450 |
| WKEY | Covington, Va. | 1340 |
| WKFD | Wickford, R.I. | 1370 |
| WKGN | Knoxville, Tenn. | 1340 |
| WKHM | Jackson, Mich. | 970 |
| WKIC | Hazard, Ky. | 1390 |
| WKID | Urbana, Ill. | 1580 |
| WKIG | Glenville, Ga. | 1580 |
| WKIK | Leonardtown, Md. | 1370 |
| WKIN | Kingsport, Tenn. | 1320 |
| WKIP | Poughkeepsie, N.Y. | 1450 |
| WKIS | Orlando, Fla. | 740 |
| WKIX | Raleigh, N.C. | 850 |
| WKIZ | Key West, Fla. | 1500 |
| WKJB | Mayaguez, P.R. | 710 |
| WKJG | Fort Wayne, Ind. | 1380 |
| WKKD | Aurora, Ill. | 1580 |
| WKKO | Cocoa, Fla. | 860 |
| WKKS | Vanceburg, Ky. | 1570 |
| WKLA | Ludington, Mich. | 1450 |
| WKLC | St. Albans, W.Va. | 1300 |
| WKLE | Washington, Ga. | 1370 |
| WKLF | Clanton, Ala. | 980 |
| WKLJ | Sparta, Wis. | 990 |
| WKLK | Cloquet, Minn. | 1230 |
| WKLM | Wilmington, N.C. | 980 |
| WKLO | Louisville, Ky. | 1080 |
| WKLV | Blackstone, Va. | 1440 |
| WKLX | Paris, Ky. | 1440 |
| WKLY | Hartwell, Ga. | 980 |
| WKLZ | Kalamazoo, Mich. | 1470 |
| WKMC | Roaring Sprgs., Pa. | 1370 |
| WKMF | Flint, Mich. | 1470 |
| WKMH | Dearborn, Mich. | 1310 |
| WKMI | Kalamazoo, Mich. | 1360 |
| WKMK | Blountstown, Fla. | 1370 |
| WKMT | Kings Mtn., N.C. | 1220 |
| WKNE | Keene, N.H. | 1290 |
| WKNX | Saginaw, Mich. | 1210 |
| WKNY | Kingston, N.Y. | 1490 |
| WKOA | Hopkinsville, Ky. | 1480 |
| WKOK | Sunbury, Pa. | 1240 |
| WKOP | Binghamton, N.Y. | 1360 |
| WKOS | Ocala, Fla. | 1370 |
| WKOV | Wellston, Ohio | 1330 |
| WKOW | Madison, Wis. | 1070 |
| WKOX | Framingham, Mass. | 1190 |
| WKOY | Bluefield, W.Va. | 1240 |
| WKOZ | Kosciusko, Miss. | 1350 |
| WKPA | New Kensington, Pa. | 1150 |
| WKPR | Kalamazoo, Mich. | 1420 |
| WKPT | Kingsport, Tenn. | 1400 |
| WKRC | Cincinnati, Ohio | 550 |
| WKRG | Mobile, Ala. | 710 |
| WKRK | Murphy, N.C. | 1390 |
| WKRM | Columbia, Tenn. | 1340 |
| WKRO | Cairo, Ill. | 1490 |
| WKRS | Waukegan, Ill. | 1220 |
| WKRT | Cortland, N.Y. | 920 |
| WKRW | Cartersville, Ga. | |
| WKRZ | Oil City, Pa. | 1340 |
| WKSB | Milford, Del. | 930 |
| WKSC | Kershaw, S.C. | 1300 |
| WKSK | W. Jefferson, N.C. | 1600 |
| WKSR | Pulaski, Tenn. | 1420 |
| WKST | New Castle, Pa. | 1280 |
| WKTC | Charlotte, N.C. | 1310 |
| WKTG | Thomasville, Ga. | 730 |
| WKTJ | Farmington, Maine | 1380 |
| WKTL | Sheboygan, Wis. | 950 |
| WKTQ | South Paris, Maine | 1450 |
| WKTX | Atlantic Beach, Fla. | 1600 |
| WKTY | LaCrosse, Wis. | 580 |
| WKUL | Cullman, Ala. | 1340 |
| WKVA | Lewistown, Pa. | 920 |
| WKVM | San Juan, P.R. | 810 |
| WKVT | Brattleboro, Vt. | 1490 |
| WKWF | Key West, Fla. | 1600 |
| WKWK | Wheeling, W.Va. | 1400 |
| WKWS | Rocky Mount, Va. | 1290 |
| WKXL | Concord, N.H. | 1450 |
| WKXV | Knoxville, Tenn. | 900 |
| WKXY | Sarasota, Fla. | 930 |
| WKY | Oklahoma City, Okla. | 930 |
| WKYB | Paducah, Ky. | 570 |
| WKYN | Rio Piedras, P.R. | 630 |
| WKYR | Keyser, W.Va. | 1270 |
| WKYW | Louisville, Ky. | 900 |
| WKZO | Kalamazoo, Mich. | 590 |
| WLAC | Nashville, Tenn. | 1510 |
| WLAD | Danbury, Conn. | 800 |
| WLAF | LaFollette, Tenn. | 1450 |
| WLAG | La Grange, Ga. | 1240 |
| WLAK | Lakeland, Fla. | 1430 |
| WLAM | Lewiston, Maine | 1470 |
| WLAN | Lancaster, Pa. | 1390 |
| WLAP | Lexington, Ky. | 630 |
| WLAQ | Rome, Ga. | 1410 |
| WLAR | Athens, Tenn. | 1450 |
| WLAS | Jacksonville, N.C. | 910 |
| WLAT | Conway, S.C. | 1330 |
| WLAU | Laurel, Miss. | 1600 |
| WLAV | Grand Rapids, Mich. | 1340 |
| WLAW | Lawrenceville, Ga. | 1360 |
| WLAY | Muscle Shoals, Ala. | 1450 |
| WLBA | Gainesville, Ga. | 1580 |
| WLBB | Carrollton, Ga. | 1100 |
| WLBC | Muncie, Ind. | 1340 |
| WLBE | Leesburg, Fla. | 790 |
| WLBG | Laurens, S.C. | 860 |
| WLBH | Mattoon, Ill. | 1170 |
| WLBI | Denham Springs, La. | 1220 |
| WLBJ | Bowling Green, Ky. | 1410 |
| WLBK | DeKalb, Ill. | 1360 |
| WLBL | Stevens Point, Wis. | 930 |
| WLBN | Lebanon, Ky. | 1590 |
| WLBR | Lebanon, Pa. | 1270 |
| WLBZ | Bangor, Maine | 620 |
| WLCK | Scottsville, Ky. | 1250 |
| WLCM | Lancaster, S.C. | 1360 |
| WLCN | Laurensburg, N.C. | 1300 |
| WLCO | Eustis, Fla. | 1240 |
| WLCS | Baton Rouge, La. | 910 |
| WLCX | LaCrosse, Wis. | 1490 |
| WLCY | St. Petersburg, Fla. | 1380 |
| WLDB | Atlantic City, N.J. | 1490 |
| WLDS | Jacksonville, Ill. | 1180 |
| WLDY | Ladysmith, Wis. | 1340 |
| WLEA | Hornell, N.Y. | 1480 |
| WLEC | Sandusky, Ohio | 1450 |
| WLEE | Richmond, Va. | 1480 |
| WLEM | Emporium, Pa. | 1240 |
| WLEO | Ponce, P.R. | 1170 |
| WLGS | Lawrenceville, Va. | 580 |
| WLET | Toccoa, Ga. | 1420 |
| WLEU | Erie, Pa. | 1450 |
| WLEW | Bad Axe, Mich. | 1340 |
| WLFA | Lafayette, Ga. | 1590 |
| WLFH | Little Falls, N.Y. | 1230 |
| WLIB | New York, N.Y. | 1190 |
| WLIJ | Shelbyville, Tenn. | 1580 |
| WLIK | Newport, Tenn. | 1270 |
| WLIL | Lenoir, Tenn. | 730 |
| WLIP | Kenosha, Wis. | 1050 |
| WLIQ | Mobile, Ala. | 1360 |
| WLIS | Old Saybrook, Conn. | 1420 |
| WLIV | Livingston, Tenn. | 920 |
| WLIZ | Lake Worth, Fla. | 1380 |
| WLKM | Three Rivers, Mich. | 1510 |
| WLKW | Providence, R.I. | 990 |
| WLLE | Raleigh, N.C. | 570 |
| WLLH | Lowell, Mass. | 1400 |
| WLLY | Wilson, N.C. | 1350 |
| WLMJ | Jackson, Ohio | 1280 |
| WLNA | Peekskill, N.Y. | 1420 |
| WLNG | Sag Harbor, N.Y. | 1600 |
| WLNH | Laconia, N.H. | 1350 |
| WLOA | Braddock, Pa. | 1550 |
| WLOB | Portland, Maine | 1310 |
| WLOC | Munfordville, Ky. | 1150 |
| WLOD | Pompano Beach, Fla. | 980 |
| WLOE | Leaksville, N.C. | 1490 |
| WLOF | Orlando, Fla. | 950 |
| WLOG | Logan, W.Va. | 1230 |
| WLOH | Princeton, W.Va. | 1490 |
| WLOI | LaPorte, Ind. | 1540 |
| WLOK | Memphis, Tenn. | 1480 |
| WLOL | Minneapolis, Minn. | 1330 |
| WLON | Lincolnton, N.C. | 1050 |
| WLOS | Asheville, N.C. | 1380 |
| WLOU | Louisville, Ky. | 1350 |
| WLOX | Biloxi, Miss. | 1490 |
| WLPM | Suffolk, Va. | 1460 |
| WLPO | LaSalle, Ill. | 1220 |
| WLPS | Lehighton, Pa. | 1150 |
| WLS | Chicago, Ill. | 890 |
| WLSB | Copper Hill, Tenn. | 1400 |
| WLSC | Loris, S.C. | 1570 |
| WLSD | Big Stone Gap, Va. | 1220 |
| WLSE | Wallace, N.C. | 1400 |
| WLSH | Lansford, Pa. | 1410 |
| WLSI | Pikeville, Ky. | 900 |
| WLSM | Louisville, Miss. | 1270 |
| WLST | Escanaba, Mich. | 600 |
| WLSV | Wellsville, N.Y. | 790 |
| WLTC | Gastonia, N.C. | 1370 |
| WLVA | Lynchburg, Va. | 590 |
| WLW | Cincinnati, Ohio | 700 |
| WLYC | Williamsport, Pa. | 1050 |
| WLYN | Lynn, Mass. | 1360 |
| WMAB | Munising, Mich. | 1400 |
| WMAC | Netter, Ga. | 1360 |
| WMAF | Madison, Fla. | 1230 |
| WMAG | Forest, Miss. | 860 |
| WMAJ | State College, Pa. | 1450 |
| WMAK | Nashville, Tenn. | 1300 |
| WMAL | Washington, D.C. | 630 |
| WMAM | Marinette, Wis. | 570 |
| WMAN | Mansfield, Ohio | 1400 |
| WMAP | Monroe, N.C. | 1060 |
| WMAQ | Chicago, Ill. | 670 |
| WMAS | Springfield, Mass. | 1450 |
| WMAX | Grand Rapids, Mich. | 1480 |
| WMAY | Springfield, Ill. | 970 |
| WMAZ | Macon, Ga. | 940 |
| WMBA | Ambridge, Pa. | 1460 |
| WMBC | Macon, Miss. | 1400 |
| WMBD | Peoria, Ill. | 1470 |
| WMBG | Richmond, Va. | 1380 |
| WMBH | Joplin, Mo. | 1450 |
| WMBI | Chicago, Ill. | 1110 |
| WMBL | Morehead City, N.C. | 740 |
| WMBM | Miami Beach, Fla. | 1490 |
| WMBN | Petoskey, Mich. | 1340 |
| WMBO | Auburn, N.Y. | 1340 |
| WMBR | Jacksonville, Fla. | 1460 |
| WMBS | Uniontown, Pa. | 590 |
| WMC | Memphis, Tenn. | 790 |

| C.L. | Location | Kc. |
|---|---|---|
| WMCA | New York, N.Y. | 570 |
| WMCH | Church Hill, Tenn. | 1260 |
| WMCP | Columbia, Tenn. | 1280 |
| WMCR | Oneida, N.Y. | 1600 |
| WMCW | Harvard, Ill. | 1600 |
| WMDC | Hazlehurst, Miss. | 1220 |
| WMDD | Fajardo, P.R. | 1490 |
| WMDF | Mount Dora, Fla. | 1580 |
| WMDN | Midland, Mich. | 1490 |
| WMEG | Eau Gallie, Fla. | 920 |
| WMEK | Chase City, Va. | 980 |
| WMEN | Tallahassee, Fla. | 1330 |
| WMEV | Marion, Va. | 1010 |
| WMEW | Baltimore, Md. | 940 |
| WMEX | Boston, Mass. | 1510 |
| WMFC | Monroeville, Ala. | 1360 |
| WMFD | Wilmington, N.C. | 630 |
| WMFG | Hibbing, Minn. | 1240 |
| WMFJ | Daytona Beach, Fla. | 1450 |
| WMFR | High Point, N.C. | 1230 |
| WMFT | Terre Haute, Ind. | 1300 |
| WMGA | Moultrie, Ga. | 1400 |
| WMGR | Bainbridge, Ga. | 930 |
| WMGS | Bowling Green, Ohio | 730 |
| WMGW | Meadville, Pa. | 1490 |
| WMGY | Montgomery, Ala. | 800 |
| WMID | Atlantic City, N.J. | 1340 |
| WMIE | Miami, Fla. | 1140 |
| WMIK | Middlesboro, Ky. | 560 |
| WMIL | Milwaukee, Wis. | 1290 |
| WMIN | Mpls.-St. Paul, Minn. | 1400 |
| WMIQ | Iron Mountain, Mich. | 1450 |
| WMIS | Natchez, Miss. | 1240 |
| WMIX | Mt. Vernon, Ill. | 940 |
| WMJM | Cordele, Ga. | 1490 |
| WMLF | Pineville, Ky. | 1230 |
| WMLO | Beverly, Mass. | 1570 |
| WMLS | Sylacauga, Ala. | 1290 |
| WMLT | Dublin, Ga. | 1330 |
| WMMB | Melbourne, Fla. | 1240 |
| WMMH | Marshall, N.C. | 1460 |
| WMMM | Westport, Conn. | 1260 |
| WMMN | Fairmont, W.Va. | 920 |
| WMMS | Bath, Maine | 730 |
| WMMW | Meriden, Conn. | 1470 |
| WMNA | Gretna, Va. | 730 |
| WMNB | No. Adams, Mass. | 1230 |
| WMNC | Morganton, N.C. | 1430 |
| WMNE | Menomonie, Wis. | 1360 |
| WMNI | Columbus, Ohio | 920 |
| WMNS | Olean, N.Y. | 1360 |
| WMNT | Manati, P.R. | 1500 |
| WMNZ | Montezuma, Ga. | 1050 |
| WMOA | Marietta, Ohio | 1490 |
| WMOC | Chattanooga, Tenn. | 1450 |
| WMOD | Moundsville, W.Va. | 1370 |
| WMOE | Mobile, Ala. | 1550 |
| WMOG | Brunswick, Ga. | 1490 |
| WMOH | Hamilton, Ohio | 1450 |
| WMOK | Metropolis, Ill. | 920 |
| WMON | Montgomery, W.Va. | 1340 |
| WMOP | Ocala, Fla. | 900 |
| WMOR | Morehead, Ky. | 1330 |
| WMOU | Berlin, N.H. | 1230 |
| WMOV | Ravenswood, W.Va. | 1360 |
| WMOX | Meridian, Miss. | 1240 |
| WNJH | Hammonton, N.J. | 1580 |
| WMOZ | Mobile, Ala. | 960 |
| WMPA | Aberdeen, Miss. | 1240 |
| WMPC | Lapeer, Mich. | 1230 |
| WMPL | Hancock, Mich. | 920 |
| WMPM | Smithfield, N.C. | 1270 |
| WMPO | Middleport-Pomroy, Ohio | 1390 |
| WMPP | Chicago Heights, Ill. | 1470 |
| WMPS | Memphis, Tenn. | 680 |
| WMPT | So. Williamsport, Pa. | 1450 |
| WMRB | Greenville, S.C. | 1490 |
| WMRC | Milford, Mass. | 1490 |
| WMRE | Monroe, Ga. | 1490 |
| WMRF | Lewistown, Pa. | 1490 |
| WMRI | Marion, Ind. | 860 |
| WMRN | Marion, Ohio | 1490 |
| WMRO | Aurora, Ill. | 1280 |
| WMRP | Flint, Mich. | 1570 |
| WMAT | Lansing, Mich. | 1010 |
| WMSA | Massena, N.Y. | 1340 |
| WMSJ | Sylva, N.C. | 1480 |
| WMSK | Morganfield, Ky. | 1550 |
| WMSL | Decatur, Ala. | 1400 |
| WMSR | Manchester, Tenn. | 1320 |
| WMST | Mt. Sterling, Ky. | 1150 |
| WMT | Cedar Rapids, Iowa | 600 |
| WMTA | Central City, Ky. | 1380 |
| WMTC | Vancleve, Ky. | 730 |
| WMTE | Manistee, Mich. | 1340 |
| WMTL | Leitchfield, Ky. | 1580 |
| WMTM | Moultrie, Ga. | 1300 |
| WMTN | Morristown, Tenn. | 1300 |
| WMTR | Morristown, N.J. | 1250 |
| WMTS | Murfreesboro, Tenn. | 860 |
| WMUS | Muskegon, Mich. | 1090 |
| WMUU | Greenville, S.C. | 1260 |
| WMVA | Martinsville, Va. | 1450 |
| WMVB | Millville, N.J. | 1440 |
| WMVG | Milledgeville, Ga. | 1450 |
| WMVO | Mt. Vernon, Ohio | 1300 |
| WMYB | Myrtle Beach, S.C. | 1450 |
| WMYN | Mayodan, N.C. | 1420 |
| WMYR | Ft. Myers, Fla. | 1410 |
| WNAB | Bridgeport, Conn. | 1450 |
| WNAC | Boston, Mass. | 680 |
| WNAD | Norman, Okla. | 640 |
| WNAE | Warren, Pa. | 1310 |
| WNAG | Grenada, Miss. | 1400 |
| WNAH | Nashville, Tenn. | 1360 |
| WNAK | Nanticoke, Pa. | 730 |
| WNAM | Neenah, Wis. | 1280 |
| WNAR | Norristown, Pa. | 1110 |
| WNAT | Natchez, Miss. | 1450 |
| WNAU | New Albany, Miss. | 1470 |
| WNAV | Annapolis, Md. | 1430 |
| WNAX | Yankton, S.Dak. | 570 |
| WNBC | New York, N.Y. | 660 |
| WNBF | Binghamton, N.Y. | 1290 |
| WNBH | New Bedford, Mass. | 1340 |
| WNBP | Newburyport, Mass. | 1470 |
| WNBS | Murray, Ky. | 1340 |
| WNBT | Wellsboro, Pa. | 1490 |
| WNBZ | Saranac Lake, N.Y. | 1240 |
| WNCA | Siler City, N.C. | 1570 |
| WNCC | Barnesboro, Pa. | 950 |
| WNCG | N. Charleston, S.C. | 910 |
| WNCO | Ashland, Ohio | 1340 |
| WNDB | Daytona Beach, Fla. | 1150 |
| WNDR | Syracuse, N.Y. | 1260 |
| WNDU | South Bend, Ind. | 1490 |
| WNEB | Worcester, Mass. | 1230 |
| WNEG | Taccoa, Ga. | 630 |
| WNER | Live Oak, Fla. | 1250 |
| WNES | Central City, Ky. | 1050 |
| WNEW | New York, N.Y. | 1130 |
| WNEX | Macon, Ga. | 1400 |
| WNGA | Nashville, Ga. | 1600 |
| WNGO | Mayfield, Ky. | 1320 |
| WNHC | New Haven, Conn. | 1340 |
| WNIA | Cheektowaga, N.Y. | 1230 |
| WNIK | Arecibo, P.R. | 1230 |
| WNIL | Niles, Mich. | 1290 |
| WNJR | Newark, N.J. | 1430 |
| WNKY | Neon, Ky. | 1480 |
| WNLC | New London, Conn. | 1510 |
| WNLK | Norwalk, Conn. | 1350 |
| WNMP | Evanston, Ill. | 1590 |
| WNNC | Newton, N.C. | 1230 |
| WNNJ | Newton, N.J. | 1360 |
| WNNT | Warsaw, Va. | 690 |
| WNOE | New Orleans, La. | 1060 |
| WNOG | Naples, Fla. | 1270 |
| WNOK | Columbia, S.C. | 1230 |
| WNOO | Chattanooga, Tenn. | 1260 |
| WNOP | Newport, Ky. | 740 |
| WNOR | Norfolk, Va. | 1230 |
| WNOS | High Point, N.C. | 1590 |
| WNOW | York, Pa. | 1250 |
| WNOX | Knoxville, Tenn. | 990 |
| WNPS | New Orleans, La. | 1450 |
| WNPT | Tuscaloosa, Ala. | 1280 |
| WNPV | Lansdale, Pa. | 1440 |
| WNRG | Grundy, Va. | 1250 |
| WNRK | Newark, Del. | 1260 |
| WNRI | Woonsocket, R.I. | 1380 |
| WNRV | Narrows, Va. | 990 |
| WNSL | Laurel, Miss. | 1260 |
| WNSM | Valparaiso-Niceville, Florida | 1340 |
| WNTT | Tazewell, Tenn. | 1250 |
| WNUE | Ft. Walton Beach, Fla. | 950 |
| WNUZ | Talladega, Ala. | 1230 |
| WNVA | Norton, Va. | 1350 |
| WNVL | Nicholasville, Ky. | 1250 |
| WNVY | Pensacola, Fla. | 1230 |
| WNXT | Portsmouth, Ohio | 1260 |
| WNYC | New York, N.Y. | 830 |
| WOAI | San Antonio, Tex. | 1200 |
| WOAP | Owosso, Mich. | 1080 |
| WOAY | Oak Hill, W.Va. | 860 |
| WOBS | Jacksonville, Fla. | 1360 |
| WOBT | Rhinelander, Wis. | 1240 |
| WOC | Davenport, Iowa | 1420 |
| WOCB | W. Yarmouth, Mass. | 1240 |
| WOCH | North Vernon, Ind. | 1460 |
| WOCK | Okeechobee, Fla. | 1570 |
| WODY | Bassett, Va. | 900 |
| WOHI | E. Liverpool, Ohio | 1490 |
| WOHO | Toledo, Ohio | 1470 |
| WOHP | Bellefontaine, Ohio | 1390 |
| WOHS | Shelby, N.C. | 730 |
| WOI | Ames, Iowa | 640 |
| WOIA | Saline, Mich. | 1290 |
| WOIC | Columbia, S.C. | 1320 |
| WOKB | Winter Garden, Fla | 1600 |
| WOKE | Charleston, S.C. | 1340 |
| WOKK | Meridian, Miss. | 1450 |
| WOKJ | Jackson, Miss. | 1590 |
| WOKO | Albany, N.Y. | 1460 |
| WOKS | Columbus, Ga. | 1340 |
| WOKW | Brockton, Mass. | 1410 |
| WOKY | Milwaukee, Wis. | 920 |
| WOKZ | Alton, Ill. | 1570 |
| WOL | Washington, D.C. | 1450 |
| WOLF | Syracuse, N.Y. | 1490 |
| WOLS | Florence, Ala. | 1230 |
| WOMI | Owensboro, Ky. | 1490 |
| WOMP | Bellaire, Ohio | 1290 |
| WOMT | Manitowoc, Wis. | 1240 |
| WONA | Winona, Miss. | 1570 |
| WOND | Pleasantville, N.J. | 1400 |
| WONE | Dayton, Ohio | 980 |
| WONN | Lakeland, Fla. | 1230 |
| WONW | Defiance, Ohio | 1280 |
| WOOD | Grand Rapids, Mich. | 1300 |
| WOOF | Dothan, Ala. | 560 |
| WOOK | Washington, D.C. | 1340 |
| WOOO | Deland, Fla. | 1310 |
| WOOW | Greenville, N.C. | 1340 |
| WOPA | Oak Park, Ill. | 1490 |
| WOPI | Bristol, Tenn. | 1490 |
| WOR | New York, N.Y. | 710 |
| WORA | Mayaguez, P.R. | 760 |
| WORC | Worcester, Mass. | 1310 |
| WORD | Spartanburg, S.C. | 910 |
| WORG | Orangeburg, S.C. | 1580 |
| WORK | York, Pa. | 1350 |
| WORL | Boston, Mass. | 950 |
| WORM | Savannah, Tenn. | 1010 |
| WORT | New Smyrna Beach, Florida | 1550 |
| WORX | Madison, Ind. | 1270 |
| WOSC | Fulton, N.Y. | 1300 |
| WOSH | Oshkosh, Wis. | 1490 |
| WOSU | Columbus, Ohio | 820 |
| WOTR | Corry, Pa. | 1370 |
| WOTT | Watertown, N.Y. | 1410 |
| WOTW | Nashua, N.H. | 900 |
| WOUB | Athens, Ohio | 1340 |
| WOVE | Welch, W.Va. | 1340 |
| WOW | Omaha, Nebr. | 590 |
| WOWE | Allegan, Mich. | 1580 |
| WOWI | New Albany, Ind. | 1570 |
| WOWL | Florence, Ala. | 1240 |
| WOWO | Ft. Wayne, Ind. | 1190 |
| WOWW | Naugatuck, Conn. | 860 |
| WOWY | Clewiston, Fla. | 500d |
| WOXF | Oxford, N.C. | 1340 |
| WOZK | Ozark, Ala. | 900 |
| WPAB | Ponce, P.R. | 550 |
| WPAC | Patchogue, N.Y. | 1580 |
| WPAD | Paducah, Ky. | 1450 |
| WPAG | Ann Arbor, Mich. | 1050 |
| WPAL | Charleston, S.C. | 730 |
| WPAM | Pottsville, Pa. | 1450 |
| WPAP | Fernandina Beach, Florida | 1570 |
| WPAQ | Mount Airy, N.C. | 740 |
| WPAR | Parkersburg, W.Va. | 1450 |
| WPAT | Paterson, N.J. | 930 |
| WPAX | Thomasville, Ga. | 1240 |
| WPAY | Portsmouth, Ohio | 1400 |
| WPAZ | Pottstown, Pa. | 1370 |
| WPBC | Minneapolis, Minn. | 980 |
| WPCC | Clinton, S.C. | 1400 |
| WPCF | Panama City, Fla. | 1430 |
| WPCO | Mt. Vernon, Ind. | 1590 |
| WPDM | Potsdam, N.Y. | 1470 |
| WPDQ | Jacksonville, Fla. | 600 |
| WPDR | Portage, Wis. | 1350 |
| WPDX | Clarksburg, W.Va. | 750 |
| WPEG | Winston-Salem, N.C. | 1550 |
| WPEH | Louisville, Ga. | 1420 |
| WPEL | Montrose, Pa. | 1250 |
| WPEN | Philadelphia, Pa. | 950 |
| WPEO | Peoria, Ill. | 1020 |
| WPEP | Taunton, Mass. | 1570 |
| WPET | Greensboro, N.C. | 950 |
| WPFA | Pensacola, Fla. | 790 |
| WPFB | Middletown, Ohio | 910 |
| WPFE | Eastman, Ga. | 1580 |
| WPFP | Park Falls, Wis. | 1450 |
| WPGA | Perry, Ga. | 980 |
| WPGC | Bradbury Hghts., Md. | 1580 |
| WPGW | Portland, Ind. | 1440 |
| WPHB | Philipsburg, Pa. | 1260 |
| WPIC | Sharon, Pa. | 790 |
| WPID | Piedmont, Ala. | 1280 |
| WPIK | Alexandria, Va. | 730 |
| WPIN | St. Petersburg, Fla. | 680 |
| WPIT | Pittsburgh, Pa. | 730 |
| WPKE | Pikeville, Ky. | 1240 |
| WPKO | Waverly, Ohio | 1380 |
| WPKY | Princeton, Ky. | 1580 |
| WPLA | Plant City, Fla. | 910 |
| WPLB | Greenville, Mich. | 1380 |
| WPLK | Rockmart, Ga. | 1220 |
| WPLM | Plymouth, Mass. | 1390 |
| WPLO | Atlanta, Ga. | 590 |
| WPLY | Plymouth, Wis. | 1420 |
| WPME | Punxsutawney, Pa. | 1540 |
| WPMH | Portsmouth, Va. | 1010 |
| WPMP | Pascagoula, Miss. | 1580 |
| WPNC | Plymouth, N.C. | 1470 |
| WPNF | Brevard, N.C. | 1240 |
| WPNX | Phenix City, Ala. | 1460 |
| WPOM | Pompano Beach, Fla. | 1470 |
| WPON | Pontiac, Mich. | 1460 |
| WPOP | Hartford, Conn. | 1410 |
| WPOR | Portland, Maine | 1490 |
| WPOW | New York, N.Y. | 1330 |
| WPPA | Pottsville, Pa. | 1360 |
| WPQR | McKeesport, Pa. | 1360 |
| WPRA | Mayaguez, P.R. | 990 |
| WPRC | Lincoln, Ill. | 1370 |
| WPRE | Prairie Du Chien, Wis. | 980 |
| WPRN | Butler, Ala. | 1220 |
| WPRO | Providence, R.I. | 630 |
| WPRP | Ponce, P.R. | 910 |
| WPRS | Paris, Ill. | 1440 |
| WPRT | Prestonsburg, Ky. | 960 |
| WPRW | Manassas, Va. | 1460 |
| WPRY | Perry, Fla. | 1400 |
| WPTF | Raleigh, N.C. | 680 |
| WPTR | Albany, N.Y. | 1540 |
| WPTS | Pittston, Pa. | 1540 |
| WPTW | Piqua, Ohio | 1570 |
| WPTX | Lexington Pk., Md. | 920 |
| WPUP | Gainesville, Fla. | 1390 |
| WPUV | Pulaski, Va. | 1580 |
| WPVA | Colonial Hghts., Va. | 1290 |
| WPVL | Painesville, Ohio | 1460 |
| WPYB | Benson, N.C. | 1580 |
| WQAM | Miami, Fla. | 560 |
| WQBC | Vicksburg, Miss. | 1420 |
| WQDY | Calais, Maine | 1230 |
| WQIC | Meridian, Miss. | 1390 |
| WQIK | Jacksonville, Fla. | 1280 |
| WQMN | Superior, Wis. | 1320 |
| WQMR | Silver Spring, Md. | 1050 |
| WQOK | Greenville, S.C. | 1440 |
| WQSN | Charleston, S.C. | 1450 |
| WQSR | Solvay, N.Y. | 1320 |
| WQTE | Monroe, Mich. | 560 |
| WQTY | Arlington, Fla. | 1220 |
| WQUA | Moline, Ill. | 1230 |
| WQVA | Quantico, Va. | 1250 |
| WQXI | Atlanta, Ga. | 790 |
| WQXL | Columbia, S.C. | 1320 |
| WQXQ | Ormond Bch., Fla. | 1380 |
| WQXR | New York, N.Y. | 1560 |
| WQXT | Palm Beach, Fla. | 1340 |
| WRAA | Luray, Va. | 1330 |
| WRAB | Arab, Ala. | 1380 |
| WRAC | Racine, Wis. | 1460 |
| WRAD | Radford, Va. | 1460 |
| WRAG | Carrollton, Ala. | 590 |
| WRAJ | Anna, Ill. | 1440 |
| WRAK | Williamsport, Pa. | 1400 |
| WRAL | Raleigh, N.C. | 1240 |
| WRAM | Monmouth, Ill. | 1330 |
| WRAN | Dover, N.J. | 1510 |
| WRAP | Norfolk, Va. | 850 |
| WRAW | Reading, Pa. | 1340 |
| WRAY | Princeton, Ind. | 1250 |
| WRBB | Tarpon Springs, Fla. | 1470 |
| WRBC | Jackson, Miss. | 1300 |
| WRBL | Columbus, Ga. | 1420 |
| WRC | Washington, D.C. | 980 |
| WRCD | Dalton, Ga. | 1430 |
| WRCK | Tuscumbia, Ala. | 1410 |
| WRCO | Richland, Wis. | 1450 |
| WRCS | Ahoskie, N.C. | 970 |
| WRCV | Philadelphia, Pa. | 1060 |
| WRDB | Reedsburg, Wis. | 1400 |
| WRDO | Augusta, Maine | 1400 |
| WRDW | Augusta, Ga. | 1480 |
| WREB | Holyoke, Mass. | 930 |
| WREC | Memphis, Tenn. | 600 |
| WREL | Lexington, Va. | 1450 |
| WREM | Remsen, N.Y. | 1480 |
| WREN | Topeka, Kans. | 1250 |
| WREO | Ashtabula, Ohio | 970 |
| WREV | Reidsville, N.C. | 1220 |
| WRFB | Tallahassee, Fla. | 1410 |
| WRFC | Athens, Ga. | 960 |
| WRFD | Worthington, Ohio | 880 |
| WRFS | Alexander City, Ala. | 1050 |
| WRGA | Rome, Ga. | 1470 |
| WRGM | Richmond, Va. | 1590 |
| WRGR | Starke, Fla. | 1490 |
| WRGS | Rogersville, Tenn. | 1370 |
| WRHC | Jacksonville, Fla. | 1400 |
| WRHI | Rock Hill, S.C. | 1340 |
| WRIB | Providence, R.I. | 1220 |
| WRIC | Richlands, Va. | 540 |
| WRIG | Wausau, Wis. | 1400 |
| WRIM | Pahokee, Fla. | 1250 |
| WRIO | Rio Piedras, P.R. | 1320 |
| WRIP | Rossville, Ga. | 980 |
| WRIS | Roanoke, Va. | 1410 |
| WRIT | Milwaukee, Wis. | 1340 |
| WRIV | Riverhead, N.Y. | 1390 |
| WRIX | Griffin, Ga. | 1410 |
| WRIZ | Coral Gables, Fla. | 1550 |
| WRJC | Mauston, Wis. | 1270 |
| WRJN | Racine, Wis. | 1400 |
| WRJS | San German, P.R. | 1090 |
| WRJW | Picayune, Miss. | 1320 |
| WRKB | Kannapolis, N.C. | 1460 |
| WRKD | Rockland, Maine | 1450 |
| WRKH | Rockwood, Tenn. | 580 |
| WRKM | Carthage, Tenn. | 1350 |
| WRKT | Cocoa Beach, Fla. | 1300 |
| WRLA | Luray, Va. | 1590 |
| WRLD | Lanitt, Ala. | 1490 |
| WRMA | Montgomery, Ala. | 950 |
| WRMF | Titusville, Fla. | 1050 |
| WRMN | Elgin, Ill. | 1410 |
| WRMS | Beardstown, Ill. | 790 |
| WRMT | Rocky Mount, N.C. | 1490 |
| WRNB | New Bern, N.C. | 1490 |
| WRNE | Wis. Rapids, Wis. | 1220 |
| WRNL | Richmond, Va. | 910 |
| WRNY | Rome, N.Y. | 1350 |
| WROA | Gulfport, Miss. | 1390 |
| WROB | West Point, Miss. | 1450 |
| WROC | Rochester, N.Y. | 1280 |
| WROD | Daytona Beach, Fla. | 1340 |
| WROK | Rockford, Ill. | 1440 |
| WROL | Fountain City, Tenn. | 1490 |
| WROM | Rome, Ga. | 710 |
| WRON | Ronceverte, W.Va. | 1400 |
| WROS | Scottsboro, Ala. | 1330 |
| WROV | Roanoke, Va. | 1240 |
| WROW | Albany, N.Y. | 590 |
| WROX | Clarksdale, Miss. | 1450 |
| WROY | Carmi, Ill. | 1460 |
| WROZ | Evansville, Ind. | 1400 |
| WRPB | Warner Robbins, Ga. | 1350 |
| WRR | Dallas, Tex. | 1310 |
| WRRR | Rockford, Ill. | 1330 |
| WRRZ | Clinton, N.C. | 880 |
| WRSA | Saratoga Sprgs., N.Y. | 1280 |
| WRSC | State College, Pa. | 1390 |
| WRSL | Stanford, Ky. | 1520 |
| WRSW | Warsaw, Ind. | 1480 |
| WRTA | Altoona, Pa. | 1240 |
| WRUF | Gainesville, Fla. | 850 |
| WRUM | Rumford, Maine | 790 |
| WRUN | Utica, N.Y. | 1150 |
| WRUS | Russellville, Ky. | 610 |
| WRVA | Richmond, Va. | 1140 |
| WRVK | Mt. Vernon, Ky. | 1460 |
| WRVM | Rochester, N.Y. | 680 |
| WRWD | Augusta, Ga. | 1480 |
| WRWH | Cleveland, Ga. | 1380 |
| WRWJ | Selma, Ala. | 1570 |
| WRWV | Waynesboro, Va. | 970 |
| WRXO | Roxboro, N.C. | 1430 |
| WRYM | New Britain, Conn. | 840 |
| WRYT | Pittsburgh, Pa. | 1250 |
| WSAC | Fort Knox, Ky. | 1470 |
| WSAF | Sarasota, Fla. | 1220 |

| C.L. | Location | Kc. |
|---|---|---|
| WSAI | Cincinnati, Ohio | 1360 |
| WSAJ | Grove City, Pa. | 1340 |
| WSAL | Logansport, Ind. | 1230 |
| WSAM | Saginaw, Mich. | 1400 |
| WSAN | Allentown, Pa. | 1470 |
| WSAR | Fall River, Mass. | 1480 |
| WSAT | nr. Salisbury, N.C. | 1280 |
| WSAU | Wausau, Wis. | 550 |
| WSAV | Savannah, Ga. | 630 |
| WSAY | Rochester, N.Y. | 1370 |
| WSAZ | Huntington, W.Va. | 930 |
| WSB | Atlanta, Ga. | 750 |
| WSBA | York, Pa. | 910 |
| WSBB | New Smyrna Beach, Florida | 1230 |
| WSBC | Chicago, Ill. | 1240 |
| WSBS | Gt. Barrington, Mass. | 860 |
| WSBT | South Bend, Ind. | 960 |
| WSCM | Panama City Beach, Florida | 1290 |
| WSCR | Scranton, Pa. | 1320 |
| WSDB | Homestead, Fla. | 1430 |
| WSDR | Sterling, Ill. | 1240 |
| WSEB | Sebring, Fla. | 1340 |
| WSEL | Pontotoc, Miss. | 1440 |
| WSEN | Baldwinsville, N.Y. | 1050 |
| WSET | Glen Falls, N.Y. | 1410 |
| WSEV | Sevierville, Tenn. | 930 |
| WSFB | Quitman, Ga. | 1490 |
| WSFC | Somerset, Ky. | 1240 |
| WSFR | Sanford, Fla. | 1360 |
| WSFT | Thomaston, Ga. | 1220 |
| WSGA | Savannah, Ga. | 1400 |
| WSGC | Elberton, Ga. | 1400 |
| WSGN | Birmingham, Ala. | 610 |
| WSGO | Oswego, N.Y. | 1440 |
| WSGW | Saginaw, Mich. | 790 |
| WSHF | Sheffield, Ala. | 1290 |
| WSHH | Latrobe, Pa. | 1570 |
| WSHN | Fremont, Mich. | 1550 |
| WSHP | Shippenburg, Pa. | 1480 |
| WSIB | Beaufort, S.C. | 1490 |
| WSIC | Statesville, N.C. | 1400 |
| WSID | Baltimore, Md. | 1010 |
| WSIG | Mount Jackson, Va. | 790 |
| WSIP | Paintsville, Ky. | 1490 |
| WSIR | Winter Haven, Fla. | 1490 |
| WSIV | Pekin, Ill. | 1140 |
| WSIX | Nashville, Tenn. | 980 |
| WSJC | Magee, Miss. | 1280 |
| WSJM | St. Joseph, Mich. | 1400 |
| WSJS | Winston-Salem, N.C. | 600 |
| WSKI | Montpelier-Barre, Vt. | 1240 |
| WSKP | Miami, Fla. | 1450 |
| WSKT | Colonial Village, Tennessee | 1580 |
| WSKY | Asheville, N.C. | 1230 |
| WSLB | Ogdensburg, N.Y. | 1400 |
| WSLG | Clermont, Fla. | 1340 |
| WSLI | Jackson, Miss. | 930 |
| WSLM | Salem, Ind. | 1220 |
| WSLS | Roanoke, Va. | 610 |
| WSM | Nashville, Tenn. | 650 |
| WSMA | Smyrna, Ga. | 1550 |
| WSMB | New Orleans, La. | 1350 |
| WSME | Sanford, Maine | 1220 |
| WSMG | Greenville, Tenn. | 1450 |
| WSMI | Litchfield, Ill. | 1540 |
| WSMN | Nashua, N.H. | 1590 |
| WSMT | Sparta, Tenn. | 1050 |
| WSNE | Cummings, Ga. | 1410 |
| WSNJ | nr. Bridgeton, N.J. | 1240 |
| WSNO | Barre, Vt. | 1450 |
| WSNT | Sandersville, Ga. | 1490 |
| WSNW | Seneca Twnshp., S.C. | 1150 |
| WSNY | Schenectady, N.Y. | 1240 |
| WSOC | Charlotte, N.C. | 930 |
| WSOK | Savannah, Ga. | 1230 |
| WSOL | Tampa, Fla. | 1300 |
| WSON | Henderson, Ky. | 860 |
| WSOO | Sit. Ste. Marie, Mich. | 1230 |
| WSOQ | No. Syracuse, N.Y. | 1220 |
| WSOR | Windsor, Conn. | 1480 |
| WSOY | Decatur, Ill. | 1340 |
| WSPA | Spartanburg, S.C. | 950 |
| WSPB | Sarasota, Fla. | 1450 |
| WSPD | Toledo, Ohio | 1370 |
| WSPN | Saratoga Sprgs., N.Y. | 900 |
| WSPR | Springfield, Mass. | 1270 |
| WSPT | Stevens Pt., Wis. | 1010 |
| WSPZ | Spencer, W.Va. | 1400 |
| WSRA | Milton, Fla. | 1490 |
| WSRC | Durham, N.C. | 1410 |
| WSRO | Marlborough, Mass. | 1470 |

| C.L. | Location | Kc. |
|---|---|---|
| WSRW | Hillsboro, Ohio | 1590 |
| WSSB | Durham, N.C. | 1490 |
| WSSC | Sumter, S.C. | 1340 |
| WSSO | Starkville, Miss. | 1230 |
| WSSV | Petersburg, Va. | 1240 |
| WSTC | Stamford, Conn. | 1400 |
| WSTK | Woodstock, Va. | 1230 |
| WSTL | Eminence, Ky. | 1600 |
| WSTP | Salisbury, N.C. | 1490 |
| WSTR | Sturgis, Mich. | 1230 |
| WSTS | Massena, N.Y. | 1050 |
| WSTU | Suart, Fla. | 1450 |
| WSTV | Steubenville, Ohio | 1340 |
| WSUB | Groton, Conn. | 980 |
| WSUH | Oxford, Miss. | 1420 |
| WSUI | Iowa City, Iowa | 910 |
| WSUN | St. Petersburg, Fla. | 620 |
| WSUX | Seaford, Del. | 1280 |
| WSUZ | Palatka, Fla. | 800 |
| WSVA | Harrisonburg, Va. | 550 |
| WSVL | Shelbyville, Ind. | 1520 |
| WSVN | Valdese, N.C. | 1490 |
| WSVS | Crewe, Va. | 800 |
| WSWN | Belle Glade, Fla. | 900 |
| WSWV | Pennington Gap, Va. | 1570 |
| WSWW | Platteville, Wis. | 1590 |
| WSYB | Rutland, Vt. | 1380 |
| WSYD | Mt. Airy, N.C. | 1300 |
| WSYL | Sylvania, Ga. | 1490 |
| WSYR | Syracuse, N.Y. | 570 |
| WTAB | Tabor City, N.C. | 1370 |
| WTAC | Flint, Mich. | 600 |
| WTAD | Quincy, Ill. | 930 |
| WTAG | Worcester, Mass. | 580 |
| WTAL | Tallahassee, Fla. | 1270 |
| WTAN | Clearwater, Fla. | 1340 |
| WTAO | Cambridge, Mass. | 740 |
| WTAP | Parkersburg, W.Va. | 1230 |
| WTAQ | LaGrange, Ill. | 1300 |
| WTAR | Norfolk, Va. | 790 |
| WTAW | Bryan, Tex. | 1150 |
| WTAX | Springfield, Ill. | 1240 |
| WTAY | Robinson, Ill. | 1570 |
| WTBC | Tuscaloosa, Ala. | 1230 |
| WTBF | Troy, Ala. | 970 |
| WTBO | Cumberland, Md. | 1450 |
| WTCB | Flomaton, Ala. | 990 |
| WTCH | Shawano, Wis. | 960 |
| WTCJ | Tell City, Ind. | 1230 |
| WTCM | Traverse City, Mich. | 1400 |
| WTCN | Minneapolis, Minn. | 1280 |
| WTCO | Campbellsville, Ky. | 1450 |
| WTCR | Ashland, Ky. | 1420 |
| WTCS | Fairmont, W.Va. | 1490 |
| WTCW | Whitesburg, Ky. | 920 |
| WTGA | Thomaston, Ga. | 1590 |
| WTEL | Philadelphia, Pa. | 860 |
| WTGR | Charleston, W.Va. | 1490 |
| WTHG | Jackson, Ala. | 1290 |
| WTHI | Terre Haute, Ind. | 1480 |
| WTHR | Panama City Fla. | 1480 |
| WTHT | Hazleton, Pa. | 1300 |
| WTIC | Hartford, Conn. | 1080 |
| WTID | Newport News, Va. | 1270 |
| WTIF | Tifton, Ga. | 1340 |
| WTIG | Massillon, Ohio | 900 |
| WTIK | Durham, N.C. | 1310 |
| WTIL | Mayaguez, P.R. | 1300 |
| WTIM | Taylorville, Ill. | 1410 |
| WTIP | Charleston, W.Va. | 1240 |
| WTIX | New Orleans, La. | 690 |
| WTJH | East Point, Ga. | 1260 |
| WTJS | Jackson, Tenn. | 1390 |
| WTKM | Hartford, Wis. | 1540 |
| WTKO | Ithaca, N.Y. | 1470 |
| WTKY | Tompkinsville, Ky. | 1370 |
| WTLB | Utica, N.Y. | 1310 |
| WTLK | Taylorsville, N.C. | 1570 |
| WTLO | Somerset, Ky. | 1480 |
| WTLS | Tallasee, Ala. | 1300 |
| WTMA | Charleston, S.C. | 1250 |
| WTMB | Tomah, Wis. | 1390 |
| WTMC | Ocala, Fla. | 1290 |
| WTMJ | Milwaukee, Wis. | 620 |
| WTMP | Tampa, Fla. | 1150 |
| WTMT | Louisville, Ky. | 620 |
| WTNC | Thomasville, N.C. | 790 |
| WTND | Orangeburg, S.C. | 920 |
| WTNS | Coshocton, Ohio | 1560 |
| WTNT | Tallahassee, Fla. | 1450 |
| WTOB | Winston-Salem, N.C. | 1380 |
| WTOC | Savannah, Ga. | 1290 |
| WTOD | Toledo, Ohio | 1560 |
| WTOE | Spruce Pine, N.C. | 1470 |

| C.L. | Location | Kc. |
|---|---|---|
| WTOJ | Tomah, Wis. | 1460 |
| WTOL | Toledo, Ohio | 1230 |
| WTON | Staunton, Va. | 1240 |
| WTOP | Washington, D.C. | 1500 |
| WTOR | Torrington, Conn. | 1490 |
| WTOT | Marianna, Fla. | 980 |
| WTPI | Cookville, Tenn. | 1550 |
| WTPR | Paris, Tenn. | 710 |
| WTRA | Latrobe, Pa. | 1480 |
| WTRB | Ripley, Tenn. | 1570 |
| WTRC | Elkhart, Ind. | 1340 |
| WTRL | Bradenton, Fla. | 1490 |
| WTRN | Tyrone, Pa. | 1340 |
| WTRO | Dyersburg, Tenn. | 1330 |
| WTRP | LaGrange, Ga. | 620 |
| WTRR | Sanford, Fla. | 1400 |
| WTRU | Muskegon, Mich. | 1600 |
| WTRW | Two Rivers, Wis. | 1590 |
| WTRX | Flint, Mich. | 1330 |
| WTRY | Troy, N.Y. | 980 |
| WTSA | Brattleboro, Vt. | 1450 |
| WTSB | Lumberton, N.C. | 1340 |
| WTSL | Hanover-Lebanon, New Hampshire | 1400 |
| WTSN | Dover, N.H. | 1270 |
| WTSV | Claremont, N.H. | 1230 |
| WTTB | Vero Beach, Fla. | 1490 |
| WTTC | Towanda, Pa. | 1550 |
| WTTF | Tiffin, Ohio | 1600 |
| WTTH | Port Huron, Mich. | 1380 |
| WTTL | Madisonville, Ky. | 1310 |
| WTTM | Trenton, N.J. | 920 |
| WTTN | Watertown, Wis. | 1580 |
| WTTR | Westminster, Md. | 1470 |
| WTTS | Bloomington, Ind. | 1370 |
| WTUF | Mobile, Ala. | 840 |
| WTUG | Tuscaloosa, Ala. | 790 |
| WTUP | Tupelo, Miss. | 1490 |
| WTUX | Wilmington, Del. | 1290 |
| WTVB | Coldwater, Mich. | 1590 |
| WTVL | Waterville, Maine | 1490 |
| WTVN | Columbus, Ohio | 610 |
| WTWA | Thomson, Ga. | 1240 |
| WTWB | Auburndale, Fla. | 1570 |
| WTWN | St. Johnsbury, Vt. | 1340 |
| WTXL | W. Spgfd., Mass. | 1490 |
| WTYC | Rock Hill, S.C. | 1150 |
| WTYM | East Longmeadow, Mass. | 1600 |
| WTYN | Tryon, N.C. | 1550 |
| WTYS | Marianna, Fla. | 1340 |
| WUFO | Amherst, N.Y. | 1080 |
| WULA | Eufaula, Ala. | 1240 |
| WUNE | Baton Rouge, La. | 1550 |
| WUSJ | Lockport, N.Y. | 1340 |
| WUST | Bethesda, Md. | 1120 |
| WVAM | Altoona, Pa. | 1430 |
| WVAR | Richwood, W.Va. | 1280 |
| WVCG | Coral Gables, Fla. | 1070 |
| WVCH | Chester, Pa. | 740 |
| WVEC | Hampton, Va. | 1490 |
| WVIM | Vicksburg, Miss. | 1490 |
| WVIP | Mt. Kisco, N.Y. | 1310 |
| WVJP | Caguas, P.R. | 1110 |
| WVJS | Owensboro, Ky. | 1420 |
| WVKO | Columbus, Ohio | 1580 |
| WVLD | Valdosta, Ga. | 1450 |
| WVLK | Lexington, Ky. | 590 |
| WVLN | Olney, Ill. | 740 |
| WVMC | Mt. Carmel, Ill. | 1360 |
| WVMI | Biloxi, Miss. | 570 |
| WVNA | Tuscumbia, Ala. | 1590 |
| WVNJ | Newark, N.J. | 620 |
| WVOE | Chadburn, N.C. | 1590 |
| WVOK | Birmingham, Ala. | 690 |
| WVOL | Berry Hill, Tenn. | 1470 |
| WVOM | Iuka, Miss. | 1270 |
| WVOP | Vidalia, Ga. | 970 |
| WVOS | Liberty, N.Y. | 1240 |
| WVOT | Wilson, N.C. | 1420 |
| WVOX | New Rochelle, N.Y. | 1460 |
| WVPO | Stroudsburg, Pa. | 840 |
| WVSC | Somerset, Pa. | 990 |
| WVVW | Grafton, W.Va. | 1260 |
| WWBC | Bay City, Mich. | 1250 |
| WWBD | Bamberg, S.C. | 790 |
| WWBZ | Vineland, N.J. | 1360 |
| WWCA | Gary, Ind. | 1270 |
| WWCC | Bremen, Ga. | 1440 |
| WWCH | Clarion, Pa. | 1300 |
| WWCO | Waterbury, Conn. | 1240 |
| WWDC | Washington, D.C. | 1260 |
| WWGP | Sanford, N.C. | 1050 |
| WWGS | Tifton, Ga. | 1430 |

| C.L. | Location | Kc. |
|---|---|---|
| WWHG | Hornell, N.Y. | 1320 |
| WWHY | Huntington, W.Va. | 1470 |
| WWIL | Ft. Lauderdale, Fla. | 1580 |
| WWIN | Baltimore, Md. | 1400 |
| WWIS | Black River Falls, Wis. | 1260 |
| WWIT | Canton, N.C. | 970 |
| WWIZ | Lorain, Ohio | 1380 |
| WWJ | Detroit, Mich. | 950 |
| WWJB | Brooksville, Fla. | 1450 |
| WWKY | Winchester, Ky. | 1380 |
| WWL | New Orleans, La. | 870 |
| WWML | Portage, Wis. | 1470 |
| WWNC | Asheville, N.C. | 570 |
| WWNH | Rochester, N.H. | 930 |
| WWNR | Beckley, W.Va. | 620 |
| WWNS | Statesboro, Ga. | 1240 |
| WWNY | Watertown, N.Y. | 790 |
| WWOD | Lynchburg, Va. | 1390 |
| WWOK | Charlotte, N.C. | 1480 |
| WWOL | Buffalo, N.Y. | 1120 |
| WWOM | New Orleans, La. | 600 |
| WWON | Woonsocket, R.I. | 1240 |
| WWOW | Conneaut, Ohio | 1360 |
| WWPA | Williamsport, Pa. | 1340 |
| WWPF | Palatka, Fla. | 1260 |
| WWRI | W. Warwick, R.I. | 1450 |
| WWRJ | White River Junc., Vt. | 910 |
| WWRL | Woodside, N.Y. | 1600 |
| WWRO | Caro, Mich. | 1360 |
| WWSC | Glens Falls, N.Y. | 1450 |
| WWSR | St. Albans, Vt. | 1420 |
| WWST | Wooster, Ohio | 960 |
| WWSW | Pittsburgh, Pa. | 970 |
| WWVA | Wheeling, W.Va. | 1170 |
| WWWB | Jasper, Ala. | 1360 |
| WWWF | Fayette, Ala. | 990 |
| WWWR | Russellville, Ala. | 920 |
| WWWW | Rio Piedras, P.R. | 1520 |
| WWXL | Manchester, Ky. | 1450 |
| WWYN | Erie, Pa. | 1260 |
| WWYO | Pineville, W.Va. | 970 |
| WXAL | Demopolis, Ala. | 1400 |
| WXGI | Richmond, Va. | 950 |
| WXIG | Windemere, Fla. | 1480 |
| WXLI | Dublin, Ga. | 1230 |
| WXLL | Big Delta, Alaska | 980 |
| WXLW | Indianapolis, Ind. | 950 |
| WXMT | Merrill, Wis. | 730 |
| WXOK | Baton Rouge, La. | 1260 |
| WXRF | Guayama, P.R. | 1590 |
| WXTN | Lexington, Miss. | 1150 |
| WXTR | Pawtucket, R.I. | 550 |
| WXVA | Charleston, W.Va. | 1550 |
| WXVW | Jeffersonville, Ind. | 1450 |
| WXXX | Hattiesburg, Miss. | 1310 |
| WXYJ | Jamestown, N.Y. | 1340 |
| WXYZ | Detroit, Mich. | 1270 |
| WYAL | Scotland Neck, N.C. | 1280 |
| WYAM | Bessemer, Ala. | 1450 |
| WYCL | York, S.C. | 1580 |
| WYDE | Birmingham, Ala. | 850 |
| WYGO | Corbin, Ky. | 1330 |
| WYLO | New Orleans, La. | 940 |
| WYMB | Manning, S.C. | 1410 |
| WYNO | Sarasota, Fla. | 1280 |
| WYNG | Warwick-East Greenwich, R.I. | 1590 |
| WYNK | Baton Rouge, La. | 1380 |
| WYNN | Florence, S.C. | 540 |
| WYPR | Danville, Va. | 970 |
| WYRE | Pittsburgh, Pa. | 1080 |
| WYRN | Louisburg, N.C. | 1480 |
| WYSE | Lakeland, Fla. | 1330 |
| WYSH | Clinton, Tenn. | 1380 |
| WYSL | Buffalo, N.Y. | 1400 |
| WYSR | Franklin, Va. | 1250 |
| WYTH | Madison, Ga. | 1250 |
| WYTI | Rocky Mount, Va. | 1570 |
| WYVE | Wytheville, Va. | 1280 |
| WYZE | Atlanta, Ga. | 1480 |
| WZEP | DeFuniak Sprgs., Fla. | 1460 |
| WZKY | Albemarle, N.C. | 1580 |
| WZOB | Ft. Payne, Ala. | 1250 |
| WZOE | Princeton, Ill. | 1490 |
| WZOK | Jacksonville, Fla. | 1320 |
| WZOO | Spartanburg, S.C. | 1400 |
| WZRH | Zephyr Hills, Fla. | 1400 |
| WZRO | Jacksonville Beach, Florida | 1010 |
| WZST | Tampa, Fla. | 1550 |
| WZYX | Cowan, Tenn. | 1440 |
| XETRA | Los Angeles, Calif. | 690 |

# Canadian AM Stations By Call Letters

| C.L. | Location | Kc. |
|---|---|---|
| CBA | Sackville, N.B. | 1070 |
| CBAF | Moncton, N.B. | 1300 |
| CBE | Windsor, Ont. | 1550 |
| CBF | Montreal, Que. | 690 |
| CBG | Gander, Nfld. | 1450 |
| CBH | Halifax, N.S. | 790 |
| CBI | Sydney, N.S. | 1140 |
| CBJ | Chicoutimi, Que. | 1580 |
| CBK | Regina, Sask. | 540 |
| CBL | Toronto, Ont. | 740 |
| CBM | Montreal, Que. | 940 |
| CBN | St. John's, Nfld. | 640 |
| CBO | Ottawa, Ont. | 910 |
| CBT | Grand Falls, Nfld. | 990 |
| CBU | Vancouver, B.C. | 690 |
| CBV | Quebec, Que. | 980 |
| CBW | Winnipeg, Man. | 990 |
| CBX | Edmonton, Alta. | 1010 |
| CBXA | Edmonton, Alta. | 740 |

| C.L. | Location | Kc. |
|---|---|---|
| CBY | Corner Brook, Nfld. | 990 |
| CFAB | Windsor, N.S. | 1450 |
| CFAC | Calgary, Alta. | 960 |
| CFAM | Altona, Man. | 1290 |
| CFAR | Flin Flon, Man. | 590 |
| CFAX | Victoria, B.C. | 810 |
| CFBC | Saint John, N.B. | 930 |
| CFBM | Brochet, Man. | 1450 |
| CFBR | Sudbury, Ont. | 550 |
| CFCB | Corner Book, Nfld. | 570 |
| CFCF | Montreal, Que. | 600 |
| CFCH | North Bay, Ont. | 600 |
| CFCL | Timmins, Ont. | 620 |
| CFCN | Calgary, Alta. | 1060 |
| CFCO | Chatham, Ont. | 630 |
| CFCP | Courtenay, B.C. | 1440 |
| CFCW | Camrose, Alta. | 1230 |
| CFCY | Charlottetown, P.E.I. | 630 |
| CFDA | Victoriaville, Que. | 1380 |

| C.L. | Location | Kc. |
|---|---|---|
| CFGB | Goose Bay, Nfld. | 1340 |
| CFGM | Richmond Hill, Ont. | 1310 |
| CFGP | Grande Prairie, Alta. | 1050 |
| CFGR | Gravelbourg, Sask. | 1230 |
| CFGT | St. Joseph d'Alma, Que. | 1270 |
| CFJC | Kamloops, B.C. | 910 |
| CFJR | Brockville, Ont. | 1450 |
| CFKL | Schefferville, Que. | 1230 |
| CFLM | LaTuque, Que. | 1240 |
| CFML | Cornwall, Ont. | 1110 |
| CFNB | Fredericton, N.B. | 550 |
| CFNS | Saskatoon, Sask. | 1170 |
| CFNW | Norman Wells, Northwest Territory | 1240 |
| CFOB | Fort Frances, Ont. | 800 |
| CFOR | Orillia, Ont. | 1570 |
| CFOS | Owen Sound, Ont. | 560 |
| CFOX | Pointe Claire, Que. | 1470 |
| CFPA | Port Arthur, Ont. | 1230 |

| C.L. | Location | Kc. |
|---|---|---|
| CFPL | London, Ont. | 980 |
| CFPR | Prince Rupert, B.C. | 1240 |
| CFQC | Saskatoon, Sask. | 600 |
| CFRA | Ottawa, Ont. | 560 |
| CFRB | Toronto, Ont. | 1010 |
| CFRC | Kingston, Ont. | 1490 |
| CFRG | Gravelbourg, Sask. | 710 |
| CFRN | Edmonton, Alta. | 1260 |
| CFRS | Simcoe, Ont. | 1560 |
| CFRY | Portage la Prairie, Man. | 1570 |
| CFSL | Weyburn, Sask. | 1340 |
| CFTK | Terrace, B.C. | 1140 |
| CFUN | Vancouver, B.C. | 1410 |
| CFWH | Whitehorse, Yukon T. | 1240 |
| CFYK | Yellowknife, N.W.T. | 1340 |

| C.L. | Location | Kc. |
|---|---|---|
| CFYT | Dawson, Yukon T. | 1230 |
| CHAB | Moose Jaw, Sask. | 800 |
| CHAD | Amos, Que. | 1340 |
| CHAT | Medicine Hat, Alta. | 1270 |
| CHEC | Lethbridge, Alta. | 1090 |
| CHED | Edmonton, Alta. | 1080 |
| CHEF | Granby, Que. | 1450 |
| CHEX | Peterborough, Ont. | 980 |
| CHFA | Edmonton, Alta. | 680 |
| CHFC | Churchill, Man. | 1230 |
| CHGB | St. Anne de la Pocatiere, Que. | 1350 |
| CHIC | Brampton, Ont. | 1090 |
| CHIQ | Hamilton, Ont. | 1280 |
| CHLN | Three Rivers, Que. | 550 |
| CHLO | St. Thomas, Ont. | 680 |
| CHLP | Montreal, Que. | 1410 |
| CHLT | Sherbrooke, Que. | 630 |
| CHML | Hamilton, Ont. | 900 |
| CHNC | New Carlisle, Que. | 610 |
| CHNO | Sudbury, Ont. | 900 |
| CHNS | Halifax, N.S. | 960 |
| CHOK | Sarnia, Ont. | 1070 |
| CHOV | Pembroke, Ont. | 1350 |
| CHOW | Welland, Ontario | 1470 |
| CHQM | Vancouver, BC. | 1320 |
| CHRC | Quebec, Que. | 800 |
| CHRD | Drummondville, Que. | 1340 |
| CHRL | Roberval, Que. | 910 |
| CHRS | St. Jean, Que. | 1090 |
| CHSJ | Saint John, N.B. | 1150 |
| CHUB | Nanaimo, B.C. | 1570 |
| CHUC | Port Hope, Ont. | 1500 |
| CHUM | Toronto, Ont. | 1050 |
| CHVC | Niagara Falls, Ont. | 1600 |
| CHWK | Chilliwack, B.C. | 1270 |
| CHWO | Oakville, Ont. | 1250 |
| CJAD | Montreal, Que. | 800 |
| CJAF | Cabano, Que. | 1340 |
| CJAT | Trail, B.C. | 610 |
| CJAV | Port Alberni, B.C. | 1240 |
| CJBC | Toronto, Ont. | 860 |
| CJBQ | Belleville, Ont. | 800 |
| CJBR | Rimouski, Que. | 900 |
| CJCA | Edmonton, Alta. | 930 |
| CJCB | Sydney, N.S. | 1270 |
| CJCH | Halifax, N.S. | 920 |
| CJCJ | Woodstock, N.B. | 920 |
| CJCS | Stratford, Ont. | 1240 |
| CJDC | Dawson Creek, B.C. | 560 |
| CJEM | Edmundston, N.B. | 570 |
| CJET | Smiths Falls, Ont. | 630 |
| CJFP | Riviere du Loup, Que. | 1400 |
| CJFX | Antigonish, N.S. | 580 |
| CJGX | Yorkton, Sask. | 940 |
| CJIB | Vernon, B.C. | 940 |
| CJIC | Sault Ste. Marie, Ont. | 1050 |
| CJKL | Kirkland Lake, Ont. | 560 |
| CJLM | Joliette, Que. | 1350 |
| CJLR | Quebec, Que. | 1060 |
| CJLS | Yarmouth, N. S. | 1340 |
| CJLX | Ft. Williams, Ont. | 800 |
| CJME | Regina, Sask. | 1300 |
| CJMS | Montreal, Que. | 1280 |
| CJMT | Chicoutimi, Que. | 1420 |
| CJNB | N. Battleford, Sask. | 1460 |
| CJNR | Blind River, Ont. | 730 |
| CJOB | Winnipeg, Man. | 680 |
| CJOC | Lethbridge, Alta. | 1220 |
| CJON | St. John's, Nfld. | 930 |
| CJOR | Vancouver, B.C. | 600 |
| CJOY | Guelph, Ont. | 1460 |
| CJQC | Quebec, Que. | 1340 |
| CJRH | Richmond Hill, Ont. | 1310 |
| CJRL | Kenora, Ont. | 1220 |
| CJRW | Summerside, P.E.I. | 1240 |
| CJSO | Sorel, Que. | 1320 |
| CJSP | Leamington, Ont. | 710 |
| CJSS | Cornwall, Ont. | 1220 |
| CJVI | Victoria, B.C. | 900 |
| CKAC | Montreal, Que. | 730 |
| CKAR | Huntsville, Ont. | 590 |
| CKAR-1 | Parry Sound, Ont. | 1340 |
| CKBB | Barrie, Ont. | 950 |
| CKBC | Bathurst, N.B. | 1400 |
| CKBI | Prince Albert, Sask. | 900 |
| CKBL | Matane, Que. | 1250 |
| CKBM | Montmagny, Que. | 1490 |
| CKBS | St. Hyacinthe, Que. | 1240 |
| CKBW | Bridgewater, N.S. | 1000 |
| CKCH | Hull, Que. | 970 |
| CKCK | Regina, Sask. | 620 |
| CKCL | Truro, N.S. | 600 |
| CKCQ | Quesnel, B.C. | 570 |
| CKCQ-1 | Williams Lake, B.C. | 1240 |
| CKCR | Kitchener, Ont. | 1490 |
| CKCV | Quebec, Que. | 1280 |
| CKCW | Moncton, N.B. | 1220 |
| CKCY | Sault Ste. Marie, Ont. | 920 |
| CKDA | Victoria, B.C. | 1220 |
| CKDH | Amherst, N.S. | 1400 |
| CKDM | Dauphin, Man. | 730 |
| CKEC | New Glasgow, N.S. | 1320 |
| CKEK | Cranbrook, B.C. | 570 |
| CKEN | Kentville, N.S. | 1350 |
| CKEY | Toronto, Ont. | 580 |
| CKFH | Toronto, Ont. | 1430 |
| CKGB | Timmins, Ont. | 680 |
| CKGM | Montreal, Que. | 980 |
| CKGR | Galt, Ont. | 1110 |
| CKJL | St. Jerome, Que. | 900 |
| CKKW | Kitchener, Ont. | 1320 |
| CKLB | Oshawa, Ont. | 1350 |
| CKLC | Kingston, Ont. | 1380 |
| CKLD | Thetford Mines, Que. | 1230 |
| CKLG | N. Vancouver, B.C. | 730 |
| CKLN | Nelson, B.C. | 1390 |
| CKLS | LaSarre, Que. | 1240 |
| CKLW | Windsor, Ont. | 800 |
| CKLY | Lindsay, Ont. | 910 |
| CKMP | Midland, Ont. | 1230 |
| CKMR | Newcastle, N.B. | 790 |
| CKNB | Campbellton, N.B. | 950 |
| CKNW | New Westminster, British Columbia | 980 |
| CKNX | Wingham, Ont. | 920 |
| CKOC | Hamilton, Ont. | 1150 |
| CKOK | Penticton, B.C. | 800 |
| CKOM | Saskatoon, Sask. | 1250 |
| CKOT | Tillsonburg, Ont. | 1510 |
| CKOV | Kelowna, B.C. | 630 |
| CKOX | Woodstock, Ont. | 1340 |
| CKOY | Ottawa, Ont. | 1310 |
| CKPC | Brantford, Ont. | 1380 |
| CKPG | Prince George, B.C. | 550 |
| CKPR | Fort William, Ont. | 580 |
| CKPT | Peterborough, Ont. | 1420 |
| CKRB | Ville St. Georges, Que. | 1460 |
| CKRC | Winnipeg, Man. | 630 |
| CKRD | Red Deer, Alta. | 850 |
| CKRM | Regina, Sask. | 980 |
| CKRN | Rouyn, Que. | 1400 |
| CKRS | Jonquiere, Que. | 590 |
| CKSA | Lloydminster, Alta. | 1150 |
| CKSB | St. Boniface, Man. | 1050 |
| CKSL | London, Ont. | 1290 |
| CKSM | Shawinigan, Quebec | 1220 |
| CKSO | Sudbury, Ont. | 790 |
| CKSW | Swift Current, Sask. | 1400 |
| CKTB | St. Catharines, Ont. | 610 |
| CKTR | Three Rivers, Que. | 1150 |
| CKTS | Sherbrooke, Que. | 900 |
| CKUA | Edmonton, Alta. | 580 |
| CKVD | Val d'Or, Que. | 1230 |
| CKVL | Verdun, Que. | 850 |
| CKVM | Ville Marie, Que. | 710 |
| CKWS | Kingston, Ont. | 960 |
| CKWX | Vancouver, B.C. | 1130 |
| CKX | Brandon, Man. | 1150 |
| CKXL | Calgary, Alta. | 1140 |
| CKY | Winnipeg, Man. | 580 |
| CKYL | Peace River, Alta. | 630 |
| VOAR | St. John's, Nfld. | 1230 |
| VOCM | St. John's, Nfld. | 590 |
| VOWR | St. John's, Nfld. | 800 |

# Mexican and Cuban AM Stations

Mexican stations audible in the Southwest; the more powerful Cuban stations

## Mexico

### BAJA CALIFORNIA

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Cuervos | XEDY | 1460 | 1000 |
| El Saugal | XEDX | 1010 | 500 |
| Ensenada | XEPF | 1400 | 250 |
| | XEXK | 920 | 250 |
| Mexicali | XED | 1050 | 5000 |
| | XEAA | 1340 | 250 |
| | XEAO | 910 | 250 |
| | XECL | 990 | 5000 |
| | XEGE | 1150 | 1000 |
| Tijuana | XEC | 1310 | 250 |
| | XETRA | 690 | 50000 |
| | XEAU | 1470 | 5000 |
| | XEAZ | 1270 | 500 |
| | XEBG | 1550 | 1000 |
| | XEGM | 950 | 2500 |
| | XEMO | 860 | 5000 |
| | XEXX | 1420 | 2000 |

### CHIHUAHUA

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Chihuahua | XEM | 1390 | 500 |
| | XEBU | 620 | 1000 |
| | XEBW | 1280 | 1000 |
| | XEFI | 580 | 1000 |
| | XERA | 1490 | 250 |
| Ciudad Camargo | XEHA | 580 | 1000 |
| Ciudad Delicias | XEBN | 1240 | 250 |
| | XEJK | 1340 | 250 |
| Ciudad Juarez | XEF | 1420 | 250 |
| | XEJ | 970 | 5000 |
| | XEP | 1300 | 500 |
| | XEFV | 1240 | 250 |
| | XELO | 800 | 150000 |
| | XEWG | 1490 | 250 |
| | XEYC | 1460 | 1000 |
| Hidalgo | XEJS | 1150 | 500 |
| N. Casas Grandes | XETX | 1010 | 250 |

### COAHUILA

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Ciudad Acuna | XEKD | 1010 | 1000 |
| Monclova | XEMF | 1260 | 250 |
| Piedras Negras | XEMJ | 920 | 1000 |
| | XEMU | 580 | 5000 |
| Sabinas | XEBX | 610 | 5000 |
| Saltillo | XESJ | 1250 | 500 |
| | XESG | 1510 | 1000 |
| Torreon | XEBP | 1310 | 5000 |
| Villa Acuna | XEDH | 1340 | 250 |
| | XERF | 1570 | 250000 |

### DISTRITO FEDERAL

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Mexico City | XEL | 1260 | 5000 |
| | XEN | 690 | 20000 |
| | XEQ | 940 | 150000 |
| | XEW | 900 | 250000 |
| | XEX | 730 | 500000 |
| | XEFR | 1530 | 5000 |
| | XEJP | 1150 | 10000 |
| | XELA | 830 | 10000 |
| | XELZ | 1440 | 5000 |
| | XEMX | 1380 | 5000 |
| | XENK | 620 | 5000 |
| | XEOY | 1000 | 50000 |
| | XEPH | 590 | 5000 |
| | XEQK | 1350 | 1000 |
| | XEQR | 1030 | 10000 |
| | XERC | 790 | 1000 |
| | XERCN | 1110 | 50000 |
| | XERH | 1500 | 50000 |
| | XERPM | 660 | 10000 |
| | XESM | 1470 | 10000 |
| | XEUN | 860 | 5000 |

### DURANGO

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Durango | XEDU | 860 | 1000 |

### NUEVO LEON

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Linares | XER | 1260 | 250 |
| Monterrey | XEG | 1050 | 150000 |
| | XENL | 860 | 5000 |
| | XEH | 1420 | 1000 |
| | XET | 990 | 5000 |
| | XEAR | 1480 | 1000 |
| | XEAW | 1280 | 1000 |
| | XEFB | 630 | 5000 |
| | XEMR | 1370 | 500 |
| | XEOK | 920 | 500 |

### SAN LUIS POTOSI

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| San Luis Potosi | XEWA | 540 | 150000 |

### SONORA

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Agua Prieta | XEAQ | 1490 | 250 |
| | XEFH | 1310 | 1000 |
| Cananea | XEFQ | 980 | 500 |
| Ciudad Obregon | XEOX | 1430 | 1000 |
| Hermosillo | XEBH | 920 | 5000 |
| | XEDL | 1250 | 500 |
| | XEDM | 1580 | 50000 |
| | XEHQ | 590 | 500 |
| Magdalena | XEDJ | 1450 | 100 |
| Naco | XETM | 1350 | 1000 |
| Nogales | XEHF | 1370 | 5000 |
| San Luis | XECB | 1450 | 250 |
| Santa Ana | XEAB | 1400 | 250 |

### TAMAULIPAS

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Matamoros | XEO | 970 | 1000 |
| | XEAM | 1310 | 250 |
| | XEMT | 1340 | 250 |
| Nuevo Laredo | XEAS | 1410 | 250 |
| | XEBK | 1340 | 100 |
| | XEDF | 790 | 1000 |
| | XEFE | 790 | 1000 |
| | XERG | 1090 | 2500 |
| | XEXO | 1370 | 50000 |
| Reynosa | XEOR | 1390 | 1000 |
| | XERT | 590 | 5000 |
| Rio Bravo | XEFD | 1170 | 1000 |
| Tampico | XEFW | 810 | 50000 |

## Cuba

| Location | C.L. | Kc. | W.P. |
|---|---|---|---|
| Camaguey | CMJB | 880 | 1000 |
| | CMJL | 920 | 5000 |
| | CMJN | 960 | 1000 |
| | CMJE | 680 | 1000 |
| | CMFA | 1110 | 1000 |
| | CMJR | 1030 | 1000 |
| | CMJC | 1000 | 1000 |
| | CMJF | 1340 | 1000 |
| Camajuani | CMHD | 890 | 1000 |
| Ciego de Avila | CMJY | 760 | 1000 |
| | CMJT | 700 | 1000 |
| | CMSS | 800 | 1000 |
| | CMJV | 900 | 1000 |
| Cienfuegos | CMHN | 680 | 1000 |
| Consulacion Del Sur | | 880 | 1000 |
| Cruces | CMAK | 1210 | 1000 |
| Guantanamo | CMKS | 1070 | 1000 |
| Habana | CMW | 590 | 2500 |
| | CMCY | 550 | 15000 |
| | CMQ | 630 | 25000 |
| | CMCU | 660 | 1000 |
| | CMBC | 690 | 50000 |
| | CMCD | 760 | 10000 |
| | CMCH | 790 | 10000 |
| | CMBZ | 830 | 5000 |
| | CMBL | 860 | 15000 |
| | CMCF | 910 | 10000 |
| | CMBF | 950 | 5000 |
| | CMCK | 980 | 5000 |
| | CMBQ | 1010 | 5000 |
| | CMCX | 1060 | 10000 |
| | CMCA | 730 | 10000 |
| | CMCB | 1330 | 1000 |
| Holguin | CMKJ | 730 | 5000 |
| | CMKP | 670 | 1000 |
| Holguin Orte | CMKM | 560 | 5000 |
| | CMKV | 600 | 1000 |
| | CMKD | 970 | 1000 |
| | CMDC | 770 | 1000 |
| Marianao | CMZ | 1560 | 5000 |
| Neuvitas | CMJO | 1300 | 1000 |
| Pinar del Rio | CMAB | 740 | 5000 |
| | CMAF | 680 | 1000 |
| | CMAN | 840 | 1000 |
| | CMAQ | 920 | 1000 |
| Sagua La Grande | CMHA | 1280 | 1000 |
| Santa Clara | CMHI | 570 | 10000 |
| | CMHG | 670 | 1000 |
| | CMHC | 1410 | 1000 |
| | CMHQ | 640 | 15000 |
| | CMHW | 810 | 1000 |
| | CMHO | 1310 | 1000 |
| | CMHM | 1130 | 1000 |
| Sancti Spiritus | CMHT | 990 | 1000 |
| Santiago | CMDA | 1320 | 1000 |
| | CMKC | 770 | 1000 |
| | CMDB | 680 | 1000 |
| | CMKL | 800 | 2000 |
| | CMKW | 1000 | 2000 |
| | CMKR | 1090 | 1000 |
| | CMKU | 630 | 2000 |
| | CMDL | 1150 | 1000 |
| | CMKN | 930 | 1000 |
| | CMKB | 1170 | 1000 |
| Victoria de las Tunas | CMDQ | 840 | 1000 |
| | CMKT | 1520 | 1000 |

# U. S. FM Stations by States

Abbreviations: Mc., megacycles; asterisk (*) indicates educational station

### ALABAMA

| Location | C.L. | Mc. |
|---|---|---|
| Albertville | WAVU-FM | 105.1 |
| Alexander City | WRFS-FM | 106.1 |
| Andalusia | WCTA-FM | 98.1 |
| Anniston | WHMA-FM | 100.5 |
| Athens | WJOF | 104.3 |
| Birmingham | WAPI-FM | 99.5 |
| | WBRC-FM | 106.9 |
| | WSFM | 93.7 |
| Clanton | WKLF-FM | 100.9 |
| Cullman | WFMH-FM | 101.1 |
| Decatur | WHOS-FM | 102.1 |
| Homewood | WJLN | 104.7 |
| Huntsville | WAHR | 99.1 |
| | WNDA | 92.9 |
| Mobile | WKRG-FM | 99.9 |
| Montgomery | WAJM | 103.3 |
| | WFMI | 98.9 |
| Sylacauga | WMLS-FM | 98.3 |
| Tuscumbia | WVNA | 100.3 |
| Tuscaloosa | WTBO-FM | 95.7 |
| | WUOA | *91.7 |

### ALASKA

| Location | C.L. | Mc. |
|---|---|---|
| Anchorage | KNIK | 105.5 |
| | KBYR-FM | 102.1 |

### ARIZONA

| Location | C.L. | Mc. |
|---|---|---|
| Globe | KWJB-FM | 100.3 |
| Mesa | KBUZ-FM | 104.7 |
| Phoenix | KELE | 95.5 |

| Location | C.L. | Mc. |
|---|---|---|
| | KFCA | *88.5 |
| | KOOL-FM | 94.5 |
| | KITH | 101.3 |
| | KOY-FM | 92.5 |
| | KPHO-FM | 96.9 |
| | KTAR-FM | 98.7 |
| | KYEW | 93.3 |
| Tempe | KUPD-FM | 97.9 |
| Tucson | KFMM | 99.5 |

## ARKANSAS

| Location | C.L. | Mc. |
|---|---|---|
| Blytheville | KLCN-FM | 96.1 |
| Ft. Smith | KFPW-FM | 94.9 |
| Jonesboro | KBTM-FM | 101.9 |
| | KASU | 91.9 |
| Little Rock | KARK | 103.7 |
| Mammoth Springs | KAMS | 103.9 |
| Osceola | KOSE-FM | 98.1 |
| Pine Bluff | KOTN-FM | 92.3 |
| Siloam Springs | KUOA-FM | 105.7 |

## CALIFORNIA

| Location | C.L. | Mc. |
|---|---|---|
| Alameda | KJAZ | 92.7 |
| Anaheim | KEZY-FM | 95.9 |
| Arcata | KTOO | *90.5 |
| Atherton | KPEN | 101.3 |
| Auburn | KAFI | 101.1 |
| Avalon | KBIQ | 104.3 |
| Bakersfield | KERN-FM | 94.1 |
| | KQXR | 101.5 |
| Berkeley | KPFA | 94.1 |
| | KPFB | *89.3 |
| | KRE-FM | 102.9 |
| Bijou | KHUR | 99.9 |
| Claremont | KSPC | *88.9 |
| Coachella | KCHV-FM | 93.7 |
| El Cajon | KUFM | 93.3 |
| Eureka | KIEM | 96.3 |
| Fresno | KARM-FM | 101.9 |
| | KCIB-FM | 94.5 |
| | KMJ-FM | 97.9 |
| | KRFM | 93.7 |
| | KXQR | 102.7 |
| Garden Grove | KGGK | 94.3 |
| Glendale | KFMU | 97.1 |
| | KUTE | 101.9 |
| Hayward | KBBM | 101.7 |
| Inglewood | KTYM-FM | 103.9 |
| LaSierra | KSDA | *89.7 |
| Lodi | KCVR-FM | 97.7 |
| Long Beach | KFOX-FM | 102.3 |
| | KLON | *88.1 |
| | KNOB | 97.9 |
| Los Altos | KPGM | 97.7 |
| Los Angeles | KABC-FM | 95.5 |
| | KBBI | 107.5 |
| | KBCA | 105.1 |
| | KBMS | 105.9 |
| | KCBH | 98.7 |
| | KFAC-FM | 92.3 |
| | KFMU | |
| | KGLA | *103.5 |
| | KHJ | 101.1 |
| | KMLA | 100.3 |
| | KNX-FM | 93.1 |
| | KPFK | *90.7 |
| | KPOL-FM | 93.9 |
| | KRHM | 94.7 |
| | KRKD-FM | 96.3 |
| | KLAC-FM | 102.7 |
| | KUSC | *91.5 |
| | KXLU | *88.7 |
| | KHOF | 99.5 |
| Marysville | KMYC-FM | 99.9 |
| Modesto | KBEE-FM | 103.3 |
| | KTRB-FM | 104.1 |
| Monterey | KHFR | 96.9 |
| Mountain View | KFJC | *88.5 |
| Newport Beach | KNBB | 103.1 |
| Oakland | KAFE | 98.1 |
| Oceanside | KUDE | 102.1 |
| Ontario | KASK-FM | 93.5 |
| Oxnard | KAAR | 104.7 |
| Palm Springs | KPSR | 92.1 |
| Pasadena | KPCS | 89.3 |
| Redondo Beach | KAPP | 93.5 |
| Redlands | KCHL FM | 96.7 |
| Ridgecrest | KLOA-FM | 105.5 |
| Riverside | KPLI | 99.1 |
| | KACE-FM | 92.7 |
| | KDUO | 97.5 |
| Sacramento | KCRA-FM | 96.1 |
| | KFBK-FM | 96.9 |
| | KEBR | 100.5 |
| | KHIQ | 105.1 |
| | KJML | 95.3 |
| | KRAK-FM | 92.9 |
| | KSFM | 96.9 |
| | KXRQ | 98.5 |
| | KXOA-FM | 107.9 |
| Salinas | KSBW-FM | 102.5 |
| San Bernardino | KVCR | *91.9 |
| | KFMW | 99.9 |
| | KEBS | *89.5 |
| San Diego | KOGO-FM | 94.1 |
| | KFMB-FM | 100.7 |
| | KFMX-FM | 96.5 |
| | KGB-FM | 101.5 |
| | KITT | 105.3 |
| | KJLM | 98.1 |
| | KLRO | 94.9 |
| | KPRI | 106.5 |
| | KSDS | *88.3 |
| San Fernando | KVFM | 94.3 |
| San Francisco | KALW | *91.7 |
| | KBAY-FM | 104.5 |
| | KBCO | 105.3 |
| | KCBS-FM | 98.9 |
| | KDFC | 102.1 |
| | KEAR | 97.3 |
| | KFRC-FM | 106.1 |
| | KGO-FM | 103.7 |
| | KNBC-FM | 99.7 |
| | KHIP | 106.9 |
| | KRON-FM | 96.5 |
| | KSFR | 94.9 |
| | KQBY-FM | 95.7 |
| | KYA-FM | 93.3 |
| San Jose | KSJO-FM | 92.3 |
| | KRPM | 98.5 |
| San Luis Obispo | KATY-FM | 96.1 |
| San Rafael | KTIM | 100.9 |
| San Mateo | KCSM | *90.9 |
| Santa Ana | KWIZ-FM | 96.7 |
| | KFIL | 106.3 |
| Santa Barbara | KRCW | 97.5 |
| | KDB-FM | 93.7 |
| | KMUZ | 103.3 |
| Santa Clara | KSCU | *90.1 |
| Santa Cruz | KSCO-FM | 99.1 |
| Santa Maria | KEYM | 99.1 |
| | KSMA-FM | 102.5 |
| Santa Monica | KCRW | *89.9 |
| | KSRF | 103.1 |
| Sierra Madre | KMAX | 107.1 |
| Stockton | KCVN | *91.3 |
| | KSTN-FM | 107.3 |
| | KWG-FM | 105.7 |
| Turlock | KHOM | 92.9 |
| Ventura-Oxnard | KVEN-FM | 100.7 |
| Visalia | KONG-FM | 92.9 |
| Walnut Creek | KWME-FM | 92.1 |
| West Covina | KDWC | 98.3 |
| Woodland | KATT | 95.3 |

## COLORADO

| Location | C.L. | Mc. |
|---|---|---|
| Boulder | KRNW | 97.3 |
| Colorado Springs | KRCC | *91.3 |
| | KFMH | 96.5 |
| | KSHS | *90.5 |
| | KVOR-FM | 92.9 |
| Cortez | KZFM | 94.1 |
| Denver | KFML-FM | 98.5 |
| | KDEN-FM | 99.5 |
| | KLIR-FM | 100.3 |
| | KOA-FM | 103.5 |
| | KTGM | 105.1 |
| Grand Junction | KREX-FM | 92.3 |
| Manitou Springs | KCMS-FM | 102.7 |

## CONNECTICUT

| Location | C.L. | Mc. |
|---|---|---|
| Bridgeport | WJZZ | 99.9 |
| Brookfield | WGHF | 95.1 |
| Danbury | WLAD-FM | 98.3 |
| Hartford | WHCN | 105.9 |
| | WDRC-FM | 102.9 |
| | WCCC-FM | 106.9 |
| | WFNQ | 93.7 |
| | WRTC-FM | *89.3 |
| | WTIC-FM | 96.5 |
| Manchester | WINF-FM | 107.9 |
| Meriden | WBMI | 95.7 |
| Middletown | WESU | 88.1 |
| New Haven | WNHC-FM | 99.1 |
| | WYBC-FM | 94.3 |
| Stamford | WSTC-FM | 96.7 |
| Storrs | WHUS | *90.5 |
| Waterbury | WATR-FM | 92.5 |

## DELAWARE

| Location | C.L. | Mc. |
|---|---|---|
| Dover | WDOV-FM | 94.7 |
| Wilmington | WDEL-FM | 93.7 |
| | WJBR | 99.5 |

## D. C.

| Location | C.L. | Mc. |
|---|---|---|
| Washington | WASH-FM | 97.1 |
| | WAMU-FM | *88.5 |
| | WFAN | 100.3 |
| | WGAY | 99.5 |
| | WGMS-FM | 103.5 |
| | WGTB | *90.1 |
| | WMAL-FM | 107.3 |
| | WOL-FM | 98.7 |
| | WRC-FM | 93.9 |
| | WTOP-FM | 96.3 |
| | WWDC-FM | 101.1 |

## FLORIDA

| Location | C.L. | Mc. |
|---|---|---|
| Coral Gables | WVCG-FM | 105.1 |
| Daytona Beach | WNDB-FM | 94.5 |
| Fort Lauderdale | WWIL-FM | 103.5 |
| | WFLM | 105.9 |
| | WMFP | 100.7 |
| Fort Pierce | WARN | 98.7 |
| Gainesville | WRUF-FM | *104.1 |
| Jacksonville | WJAX-FM | 95.1 |
| | WZOK-FM | 96.9 |
| | WMBR-FM | 96.1 |
| Miami | WKAT-FM | 93.3 |
| | WCKR-FM | 97.3 |
| | WGBS-FM | 96.3 |
| | WTHS | *91.7 |
| | WWPB-FM | 101.5 |
| Miami Beach | WKAT-FM | 93.1 |
| | WAEZ-FM | 94.9 |
| | WMBM-FM | 93.9 |
| Ocala | WMOP-FM | 93.7 |
| Orlando | WDBO-FM | 92.3 |
| | WHOO-FM | 96.5 |
| | WKIS-FM | 100.3 |
| Palm Beach | WQXT-FM | 97.9 |
| Pensacola | WPEX-FM | 94.1 |
| St. Petersburg | WGNB | 101.5 |
| | WTCX | 99.5 |
| Sarasota | WYAK | 102.5 |
| Tallahassee | WFSU-FM | *91.5 |
| Tampa | WDAE-FM | 100.7 |
| | WFLA-FM | 93.3 |
| | WPKM | 104.7 |
| | WTUN | *88.9 |
| Winter Park | WPRK | *91.5 |

## GEORGIA

| Location | C.L. | Mc. |
|---|---|---|
| Athens | WGAU-FM | 102.5 |
| Atlanta | WABE | *90.1 |
| | WPLO-FM | 103.3 |
| | WGKA-FM | 92.9 |
| | WSB-FM | 98.5 |
| Augusta | WAUG-FM | 105.7 |
| | WBBQ-FM | 103.7 |
| Columbus | WRBL-FM | 93.3 |
| Gainesville | WDUN-FM | 103.9 |
| Lagrange | WLAG-FM | 104.1 |
| Macon | WMAZ-FM | 99.1 |
| Marietta | WBIE-FM | 101.5 |
| | WKLS | 96.1 |
| Newnan | WCOH-FM | 96.7 |
| Savannah | WTOC-FM | 97.3 |
| Swainsboro | WJAT-FM | 101.7 |
| Toccoa | WLET-FM | 106.1 |

## HAWAII

| Location | C.L. | Mc. |
|---|---|---|
| Honolulu | KAIM-FM | 95.5 |
| | KVOK | *88.1 |
| | KUOH | *90.5 |

## IDAHO

| Location | C.L. | Mc. |
|---|---|---|
| Boise | KBOI-FM | 97.9 |
| Lewiston | KOZE-FM | 96.7 |

## ILLINOIS

| Location | C.L. | Mc. |
|---|---|---|
| Alton | WOKZ-FM | 100.3 |
| Anna | WRAJ-FM | 92.7 |
| Arlington Heights | WNWC | 92.7 |
| Aurora | WKKD-FM | 95.9 |
| Bloomington | WJBC-FM | 101.5 |
| Carbondale | WSIU | *91.9 |
| Carmi | WROY-FM | 97.3 |
| Champaign | WDWS-FM | 97.5 |
| Chicago | WBBM-FM | 96.3 |
| | WBEZ | *91.5 |
| | WCLM | 101.9 |
| | WDHF | 95.5 |
| | WEBH | 93.9 |
| | WEFM | 99.5 |
| | WEHS | 97.9 |
| | WENR-FM | 94.7 |
| | WFMF | 100.3 |
| | WFMQ | 107.5 |
| | WFMT | 98.7 |
| | WKFM | 103.5 |
| | WMAQ-FM | 101.1 |
| | WMBI-FM | *90.1 |
| | WNIB | 97.1 |
| | WSBC-FM | 93.1 |
| | WJJD-FM | 104.3 |
| Decatur | WSOY-FM | 102.9 |
| DeKalb | WNIC | *91.1 |
| E. St. Louis | WBBR | 101.1 |
| Effingham | WSEI | 95.7 |
| | WELG | 103.9 |
| | WRMN-FM | 94.3 |
| Elgin | WEPS | *88.1 |
| Elmwood Park | WXFM | 105.9 |
| Evanston | WEAW | 105.1 |
| | WNUR | *89.3 |
| Galesburg | WYKC-FM | *88.1 |
| Glen Ellyn | WELF-FM | 107.1 |
| Harrisburg | WEBQ-FM | 99.9 |
| Highland Park | WNSH-FM | 103.1 |
| Jacksonville | WLDS-FM | 100.5 |
| | WAJP | 93.5 |
| Joliet | WJOL-FM | 96.7 |
| Kankakee | WKAK-FM | 99.9 |
| Kewanee | WKSD | *91.9 |
| Litchfield | WSMI-FM | 106.1 |
| Macomb | WWKS | *91.3 |
| Mattoon | WLBH-FM | 96.9 |
| Morris | WRMI-FM | 104.7 |
| Mt. Carmel | WSAB | 94.9 |
| | WVMC-FM | 101.1 |
| Mt. Vernon | WMIX-FM | 94.1 |
| Oak Park | WOPA-FM | 102.7 |
| Olney | WVLN-FM | 92.9 |
| Paris | WPRS-FM | 98.3 |
| Park Forest | WRHS | *88.1 |
| Park Ridge | WMTH | *88.5 |
| Peoria | WMBD-FM | 92.5 |
| Quincy | WGEM-FM | 105.1 |
| | WTAD-FM | 99.5 |
| Rockford | WROK-FM | 97.5 |
| Rock Island | WHBF-FM | 98.9 |
| Springfield | WTAX-FM | 103.7 |
| Taylorville | WGGM | 95.0 |
| Urbana | WILL-FM | *90.9 |
| Wheaton | WETN-FM | *88.1 |
| Winnetka | WNTH | *88.1 |

## INDIANA

| Location | C.L. | Mc. |
|---|---|---|
| Anderson | WAFM | 97.9 |
| Bloomington | WFIU | *103.7 |
| | WTTV-FM | 92.3 |
| Columbus | WCSI-FM | 98.3 |
| Connersville | WCNB-FM | 100.3 |
| Crawfordsville | WBBS-FM | 106.3 |
| Elkhart | WCMR-FM | 95.1 |
| | WTRC-FM | 100.7 |
| Evansville | WIKY-FM | 104.1 |
| | WEVC | *91.5 |
| | WPSR | 90.7 |
| Franklin | WFCI | *89.3 |
| Fort Wayne | WPTH | 95.1 |
| Gary | WGVE | *88.1 |
| Goshen | WGCS | 91.1 |
| Greencastle | WGRE | *91.7 |
| Hammond | WYCA | 92.3 |
| Hartford City | WHCI | *91.9 |
| Huntington | WVSH | *91.9 |
| Indianapolis | WAJC | *104.5 |
| | WISH-FM | 107.9 |
| | WAIV | 105.7 |
| | WFBM-FM | 94.7 |
| | WFMS | 95.5 |
| | WIAN | *90.1 |
| | WIBC-FM | 93.1 |
| Jasper | WITZ-FM | 104.7 |
| Madison | WORX-FM | 96.7 |
| Marion | WMRI-FM | 106.9 |
| | WBST | *90.7 |
| Muncie | WMUN | 104.1 |
| | WWHI | *91.5 |
| New Albany | WNAS | *88.1 |
| New Castle | WCTW-FM | 102.5 |
| | WYSN | *91.1 |
| Princeton | WRAY-FM | 98.1 |
| Richmond | WGLM | 96.1 |
| Salem | WSLM-FM | 98.9 |
| Seymour | WJOD | 93.7 |
| South Bend | WETL | *91.9 |
| Terre Haute | WTHI-FM | 99.9 |
| | WVTS | 100.7 |
| Wabash | WSKS | *91.3 |
| Warsaw | WRSW-FM | 107.3 |
| Washington | WFML | 106.5 |
| West Lafayette | WBAA-FM | 99.1 |

## IOWA

| Location | C.L. | Mc. |
|---|---|---|
| Ames | WOI-FM | *90.1 |
| Boone | KFGQ | *99.3 |
| Cedar Falls | KTCF | *88.1 |
| Cedar Rapids | KHAK-FM | 98.1 |
| Clinton | KROS-FM | 96.1 |
| Davenport | WOC-FM | 103.7 |
| Des Moines | KDPS | *88.1 |
| | KDMI | 97.3 |
| | KSO | 98.5 |
| | WHO-FM | 100.3 |
| Iowa City | KSUI | *91.7 |
| Muscatine | KWPC-FM | 99.7 |
| Sioux City | KDVR | 97.9 |
| Storm Lake | KAYL-FM | 101.5 |
| Waverly | KWAR | 89.1 |

## KANSAS

| Location | C.L. | Mc. |
|---|---|---|
| Emporia | KSTE | *88.7 |
| Kansas City | KCJC | 98.1 |
| Lawrence | KANU | *91.5 |
| Manhattan | KSDB-FM | *88.1 |
| Newton | KJRG-FM | 92.1 |
| Ottawa | KTJO-FM | *88.1 |
| Parsons | KPPS-FM | *91.1 |
| Salina | KAFM | 99.9 |
| Topeka | KTOP-FM | 100.3 |
| Wichita | KFH-FM | 100.3 |
| | KMUW | *89.1 |
| | KCBM-FM | 107.3 |

## KENTUCKY

| Location | C.L. | Mc. |
|---|---|---|
| Ashland | WCMI-FM | 93.7 |
| Central City | WNES-FM | 101.9 |
| Fulton | WFUL-FM | 104.9 |
| Glasgow | WGGC | 95.1 |
| Hazard | WKIC-FM | 96.5 |
| Henderson | WSON-FM | 99.5 |
| Hopkinsville | WRLX | 98.7 |
| | WKOF | 100.3 |
| Lexington | WBKY | *91.3 |
| | WLAP-FM | 94.5 |
| Louisville | WFPK | *91.9 |
| | WFPL | *89.3 |
| Madisonville | WFMW-FM | 93.9 |
| | WNGO-FM | 94.7 |
| Owensboro | WOMI-FM | 92.5 |
| | WVJS-FM | 96.1 |
| Paducah | WPAD-FM | 96.9 |
| | WKYB-FM | 93.3 |

## LOUISIANA

| Location | C.L. | Mc. |
|---|---|---|
| Alexandria | KALB-FM | 96.9 |
| Baton Rouge | WJBO-FM | 98.1 |
| Monroe | KMLB-FM | 104.1 |
| New Orleans | WBEH | 89.3 |
| | WDSU-FM | 105.3 |
| | WRCM | 97.1 |
| | WMMT | 95.7 |
| Shreveport | KRMD-FM | 101.1 |
| | KBCL-FM | 96.5 |
| | KWKH-FM | 94.5 |

## MAINE

| Location | C.L. | Mc. |
|---|---|---|
| Augusta | WFAU-FM | 101.3 |
| Bangor | WABI-FM | 97.1 |
| Brunswick | WBOR | *91.1 |
| Caribou | WFST-FM | 97.7 |
| Lewiston | WCOU-FM | 93.9 |
| | WRJR | 91.5 |
| Poland Springs | WMTW-FM | 94.9 |
| Portland | WLOB-FM | 97.9 |

## MARYLAND

| Location | C.L. | Mc. |
|---|---|---|
| Annapolis | WNAV-FM | 99.1 |
| | WANN-FM | 107.9 |
| | WXTC | 107.9 |
| | WAQE-FM | 101.9 |
| Baltimore | WBJC | *88.1 |
| | WCAO-FM | 102.7 |
| | WCBM-FM | 106.5 |
| | WFMM-FM | 93.1 |
| | WRBS | 95.1 |
| | WSID | 92.3 |
| | WBAL-FM | 97.9 |
| | WITH-FM | 104.3 |
| | WSID-FM | 92.3 |
| Bethesda | WJMD | 106.3 |
| | WHFS-FM | 102.5 |
| Bradbury Heights | WPGC | 95.5 |
| Cumberland | WCUM-FM | 102.9 |
| Frederick | WFMD-FM | 99.9 |
| Hagerstown | WJEJ-FM | 104.7 |
| | WARK-FM | 106.9 |
| Havre de Grace | WASA-FM | 103.7 |
| Oakland | WBUZ | 95.5 |
| Tacoma Park | WGTS-FM | *91.9 |
| Waldorf | WSMD | 104.1 |
| Westminster | WTTR-FM | 100.7 |

## MASSACHUSETTS

| Location | C.L. | Mc. |
|---|---|---|
| Amherst | WAMF | *88.1 |
| | WFCR | *88.5 |
| | WMUA | *91.1 |
| Boston | WBUR | *90.9 |
| | WBCN | 104.1 |
| | WBZ-FM | 106.7 |
| | WCOP-FM | 100.7 |
| | WEEI-FM | 103.3 |
| | WERS | *88.9 |
| | WHDH-FM | 94.5 |
| | WRKO-FM | 98.5 |
| | WXHR | 96.9 |
| Brockton | WBET-FM | 97.7 |
| Brookline | WBOS-FM | 92.9 |
| Cambridge | WGBH-FM | *89.7 |
| | WHRB-FM | 95.3 |
| | WTBS | 88.1 |
| Fitchburg | WFGM-FM | 104.7 |
| Framingham | WKOX-FM | 105.7 |
| Greenfield | WHAI-FM | 98.3 |
| Haverhill | WHAV-FM | 92.5 |
| Lawrence | WGHJ | 93.7 |
| Lowell | WLLH-FM | 99.5 |
| Lynn | WUPI-FM | 105.3 |
| Medford | WISK | 107.9 |
| New Bedford | WBSM-FM | 97.3 |
| | WNBH-FM | 98.1 |
| Plymouth | WPLM-FM | 99.1 |
| S. Hadley | WMHC | *88.5 |
| Springfield | WHYN-FM | 93.1 |
| | WEDK | *91.7 |
| | WSCB | *88.9 |
| | WMAS-FM | 94.7 |
| Waltham | WCRB-FM | 102.5 |
| W. Yarmouth | WOCB-FM | 94.3 |
| Williamstown | WCFM | *90.1 |
| Winchester | WHSR-FM | *91.9 |
| Worcester | WAAB | 107.3 |
| | WTAG-FM | 96.1 |

## MICHIGAN

| Location | C.L. | Mc. |
|---|---|---|
| Ann Arbor | WUOM | *91.7 |
| Bay City | WBCM-FM | 96.1 |
| | WNEM-FM | 102.5 |
| Benton Hrbr. | WHFB-FM | 99.9 |
| Birmingham | WHFI | 94.7 |
| Coldwater | WTVB-FM | 98.3 |
| Dearborn | WKMH-FM | 100.3 |
| Detroit | WDET-FM | *101.9 |
| | WBFG-FM | 98.7 |
| | WCHD | 105.9 |
| | WDTM | 106.7 |
| | WABX | 99.5 |
| | WDTR | *90.9 |
| | WGPM | 107.5 |
| | WJBK-FM | 93.1 |
| | WMUZ | 103.5 |
| | WMZK | 97.9 |
| | WJR-FM | 96.3 |
| | WOMC-FM | 104.3 |
| | WQRS-FM | 105.1 |
| | WRMK-FM | 98.7 |
| | WWJ-FM | 97.1 |
| | WXYZ-FM | 101.1 |
| E. Lansing | WKAR-FM | *90.5 |
| | WSWM | 99.1 |
| Flint | WFBE | *95.1 |
| Grand Rapids | WFUR-FM | 102.9 |
| | WJEF-FM | 93.7 |
| | WLAV-FM | 96.9 |
| | WMAX-FM | 101.3 |
| | WOOD-FM | 105.7 (s) |
| | WVGA-FM | 104.1 |
| | WXTO-FM | 97.9 |
| | WKLW-FM | 95.7 |
| Highland Pk. | WHPR | *88.1 |
| Holland | WJBL-FM | 94.5 |
| Houghton Lake | WJGG | 98.5 |
| Interlochen | WGYA | *103.1 |
| Jackson | WBBC | 94.1 |
| Kalamazoo | WMCR | *102.1 |
| Lansing | WJIM-FM | 97.5 |
| | WMRT-FM | 100.7 |
| Midland | WQDC-FM | 99.7 |
| Mount Clemens | WBRB-FM | 102.7 |

| Location | C.L. | Mc. |
|---|---|---|
| Oak Park | WLDM | 95.5 |
| Royal Oak | WOAK | *89.3 |
| | WOMC | 104.3 |
| Saginaw | WSAM-FM | 98.1 |
| Sturgis | WSTR-FM | 103.1 |

## MINNESOTA

| Location | C.L. | Mc. |
|---|---|---|
| Brainerd | KLIZ-FM | 95.7 |
| Mankato | KYSM-FM | 103.5 |
| Minneapolis | KTIS-FM | *98.5 |
| | KWFM | 97.1 |
| | WLOL-FM | 99.5 |
| | WPBC-FM | 101.3 |
| | WAYL | 96.1 |
| St. Cloud | KFAM-FM | 104.7 |
| St. Paul | KNOF | 95.3 |
| Worthington | KWOA-FM | 94.9 |

## MISSISSIPPI

| Location | C.L. | Mc. |
|---|---|---|
| Jackson | WJDX-FM | 102.9 |
| Laurel | WNSL-FM | 100.3 |
| Meridian | WMMI | *88.1 |

## MISSOURI

| Location | C.L. | Mc. |
|---|---|---|
| Clayton | KFUO-FM | 99.1 |
| Joplin | WMBH-FM | 96.1 |
| | KSYN | 92.5 |
| Kansas City | KCMO-FM | 94.9 |
| | KBEY | 104.3 |
| | KTSR | *90.1 |
| | KDAF-FM | 102.1 |
| | KCMK | 93.3 |
| | KCUR-FM | 89.3 |
| | KXTR | 96.5 |
| Kennett | KBOA-FM | 98.9 |
| Poplar Bluff | KWOC-FM | 94.5 |
| St. Louis | KCFM | 93.7 |
| | KADI | 96.5 |
| | WAMV-FM | 101.1 |
| | WIL-FM | 92.3 |
| | KSLH | *91.5 |
| | KSTL-FM | 98.1 |
| | KWIX | 102.5 |
| | KRFD | 106.9 |
| Springfield | KTTS-FM | 94.7 |
| West Plains | KWPM-FM | 93.9 |

## NEBRASKA

| Location | C.L. | Mc. |
|---|---|---|
| Kearney-Holdrege | KRNY-FM | 98.9 |
| Lincoln | KFMQ | 95.3 |
| Omaha | KQAL-FM | 94.3 |
| | KFAB-FM | 99.9 |
| | WOW-FM | 92.3 |
| | KICN | 96.1 |
| Scottsbluff | KNEW-FM | 94.1 |

## NEVADA

| Location | C.L. | Mc. |
|---|---|---|
| Las Vegas | KORK-FM | 97.1 |
| Reno | KNEV | 95.5 |

## NEW HAMPSHIRE

| Location | C.L. | Mc. |
|---|---|---|
| Berlin | WMOU-FM | 103.7 |
| Claremont | WTSV-FM | 106.1 |
| Manchester | WKBR-FM | 95.7 |
| Mt. Washington | WMTW-FM | 94.9 |
| Nashua | WOTW-FM | 106.3 |

## NEW JERSEY

| Location | C.L. | Mc. |
|---|---|---|
| Asbury Park | WJLK-FM | 94.3 |
| Bridgeton | WSNJ-FM | 107.7 |
| Camden | WKDN-FM | 106.9 |
| Dover | WOHA-FM | 105.5 |
| E. Orange | WFMU | *91.1 |
| Eatontown | WHTG-FM | 105.3 |
| Hackettstown | WNTI | *91.9 |
| Long Branch | WRLB | 107.1 |
| Millville | WMVB-FM | 97.3 |
| Newark | WJRZ-FM | 94.7 |
| | WVNJ-FM | 100.3 |
| | WBGO | *88.3 |
| New Brunswk. | WCTC-FM | 98.3 |
| Paterson | WPAT-FM | 93.1 |
| Princeton | WPRB | 103.9 |
| Red Bank | WFHA-FM | 106.3 |
| South Orange | WSOU | *89.5 |
| Trenton | WTOA | 97.5 |
| Wildwood | WCMC-FM | 100.7 |
| Zarephath | WAWZ-FM | 99.1 |

## NEW MEXICO

| Location | C.L. | Mc. |
|---|---|---|
| Albuquerque | KANW | *89.1 |
| | KHFM | 96.3 |
| (s) Aztec | KNDE-FM | 94.9 |
| Los Alamos | KRSN-FM | 98.5 |
| Mountain Park | KMFM | 97.9 |
| Roswell | KBIM-FM | 97.1 |

## NEW YORK

| Location | C.L. | Mc. |
|---|---|---|
| Albany | WAMC | *90.3 |
| Auburn | WMBO-FM | 96.1 |
| Babylon | WTFM | 103.5 |
| | WBAB-FM | 102.3 |
| Binghamton | WNBF-FM | 98.1 |
| | WKOP-FM | 95.3 |
| Brooklyn | WNYE | *91.5 |
| Buffalo | WBEN-FM | 106.5 |
| | WBFO | *88.7 |
| | WEBR | 94.5 |
| | WGR-FM | 96.9 |
| | WBUF | 92.9 |
| | KWOL-FM | 104.1 |
| | WIFE-FM | 103.3 |
| Central Square | WCSQ | *89.3 |
| Cherry Valley | WJIV | 101.9 |
| Corning | WCLI-FM | 106.1 |
| Cortland | WKRT-FM | 99.9 |
| DeRuyter | WOIV | 105.1 |
| Elmira | WECW | *88.1 |
| Floral Park | WSHS | *90.3 |
| Garden City | WLIR | 92.7 |
| Hempstead | WHLI-FM | 98.3 |
| | WVHC | *88.7 |
| Hornell | WWHG-FM | 105.3 |
| Ithaca | WHCU-FM | 97.3 |
| | WICB | *91.7 |
| | WEIV | 103.7 |
| | WVBR-FM | 101.7 |
| Jamestown | WJTN-FM | 93.3 |
| Kenmore | WYSL-FM | 103.3 |
| Mt. Kisco | WRNW | 107.1 |
| New Rochelle | WVOX-FM | 93.5 |
| New York | WABC-FM | 95.5 |
| | WBAI | 99.5 |
| | WBFM | 101.9 |
| | WCBS-FM | 101.1 |
| | WEVD-FM | 97.9 |
| | WFUV | *90.7 |
| | WHOM-FM | 92.3 |
| | WKCR-FM | *89.9 |
| | WNCN | 104.3 |
| | WNEW-FM | 102.7 |
| | WNYC-FM | 93.9 |
| | WNYE | 91.5 |
| | WOR-FM | 98.7 |
| | WQXR-FM | 96.3 |
| | WNBC-FM | 97.1 |
| | WRFM | 105.1 |
| | WRVR | 106.7 |
| Niagara Falls | WHLD-FM | 98.5 |
| Olean | WHDL-FM | 95.7 |
| Plattsburgh | WEAV-FM | 99.9 |
| Patchogue | WALK-FM | 97.5 |
| | WPAC-FM | 106.1 |
| Peekskill | WLNA-FM | 100.7 |
| Poughkeepsie | WKIP-FM | 104.7 |
| | WEOK-FM | 101.5 |
| Rochester | WHFM | 98.9 |
| | WBBF-FM | 100.1 |
| | WCMF | 96.5 |
| | WIRQ | *90.9 |
| | WROC-FM | 97.9 |
| Schenectady | WGFM | 99.5 |
| South Bristol | WMIV | 95.1 |
| Springville | WSPE | *88.1 |
| Syracuse | WAER | *88.1 |
| | WDDS-FM | 93.1 |
| | WONO | 100.9 |
| | WSYR-FM | 94.5 |
| Troy | WFLY | 92.3 |
| | WRPI | *91.5 |
| Utica | WRUN-FM | 105.7 |
| Wethersfield | WBIV | 105.7 |
| White Plains | WFAS-FM | 103.9 |

## NORTH CAROLINA

| Location | C.L. | Mc. |
|---|---|---|
| Albemarle | WABZ-FM | 100.9 |
| Asheboro | WGWR-FM | 92.3 |
| Asheville | WLOS-FM | 104.3 |
| Burlington | WBBB-FM | 101.1 |
| | WFNS-FM | 93.9 |
| Burlington-Graham | WBAG-FM | 92.9 |
| Chapel Hill | WUNC | *91.5 |
| Charlotte | WSOC-FM | 103.5 |
| | WYFM | 104.7 |
| Clingman's Pk. | WMIT | 106.9 |
| Durham | WDNC-FM | 105.1 |
| Elkin | WIFM-FM | 100.9 |
| Fayetteville | WFNC-FM | 98.1 |
| Forest City | WBBO-FM | 93.3 |
| | WAGY-FM | 105.3 |
| Gastonia | WGNC-FM | 101.9 |
| Goldsboro | WEQR | 96.9 |
| Greensboro | WMDE | 98.7 |
| Greenville | WWWS | *91.3 |
| Henderson | WHNC-FM | 92.5 |
| | WHKP-FM | 102.5 |
| Hendersonville | WHKP-FM | 102.5 |
| Hickory | WHKY-FM | 102.9 |
| High Point | WHPE-FM | 95.5 |
| | WHPS | *89.3 |
| | WMFR-FM | 99.5 |
| | WNOS-FM | 100.3 |
| Laurinburg | WEWO-FM | 96.5 |
| Leaksville | WLOE-FM | 94.5 |
| Lexington | WBUY-FM | 94.3 |
| Lumberton | WTSB-FM | 95.7 |
| Raleigh | WKIX-FM | 96.1 |
| | WPTF-FM | 94.7 |
| | WRAL-FM | 101.5 |
| Reidsville | WREV-FM | 102.1 |
| Rocky Mount | WEED-FM | 92.1 |
| | WFMA | 100.7 |
| Roxboro | WRXO-FM | 96.7 |
| Salisbury | WSTP-FM | 106.5 |
| Sanford | WWGP-FM | 105.5 |
| Shelby | WOHS-FM | 96.1 |
| Statesville | WFMX | 105.7 |
| Tarboro | WCPS-FM | 104.3 |
| Thomasville | WTNC-FM | 98.3 |
| Wilmington | WPRV | 93.9 |
| Wilson | WVDT-FM | 106.1 |
| Winston-Salem | WAIR-FM | 93.1 |
| | WYFS | 107.5 |
| | WFDD-FM | *88.1 |
| | WSJS-FM | 104.1 |

## OHIO

| Location | C.L. | Mc. |
|---|---|---|
| Akron | WAKR-FM | 97.5 |
| | WAPS | *89.1 |
| | WCUE-FM | 96.5 |
| Alliance | WFAH-FM | 101.7 |
| Ashland | WNCO-FM | 101.3 |
| Ashtabula | WREO-FM | 103.7 |
| Athens | WOUB-FM | *91.5 |
| Barberton | WDBN | 94.9 |
| Bellaire | WOMP-FM | 100.5 |
| Berea | WBWC | *88.3 |
| Bowling Green | WBGU | *88.1 |
| Canton | WHBC-FM | 94.1 |
| | WCNO | 106.9 |
| | WTOF-FM | 98.1 |
| Celina | WMER-FM | 94.3 |
| Chillicothe | WBEX-FM | 93.3 |
| Cincinnati | WCPO-FM | 105.1 |
| | WAEF-FM | 104.3 |
| | WGUC | *90.9 |
| | WAKW-FM | 93.3 |
| | WKRC-FM | 101.9 |
| | WSAI-FM | 102.7 |
| Cleveland | KYW-FM | 105.7 |
| | WXEN-FM | 106.6 |
| | WBOE | *90.3 |
| | WCRF | 103.3 |
| | WDGO | 95.5 |
| | WDOK-FM | 102.1 |
| | WERE-FM | 98.5 |
| | WGAR-FM | 99.5 |
| | WHK-FM | 100.7 |
| | WJW-FM | 104.1 |
| | WNOB | 107.9 |
| Cleveland Hts. | WCUY-FM | 92.5 |
| Columbus | WCBE | *90.5 |
| | WBNS-FM | 97.1 |
| | WCOL-FM | 92.3 |
| | WOSU-FM | *89.7 |
| | WTVN-FM | 96.3 |
| | WVKO | 94.7 |
| Dayton | WHIO-FM | 99.1 |
| | WONE | 104.7 |
| Delaware | WSLN | *91.1 |
| East Liverpool | WOHI-FM | 104.3 |
| Eaton | WCTM | 92.9 |
| Elyria | WEOL-FM | 107.3 |
| Findlay | WFIN-FM | 100.5 |
| Fostoria | WFOB | 96.7 |
| Fremont | WFRO-FM | 99.3 |
| Gallipolis | WJEH-FM | 101.5 |
| Granville | WDUB-FM | 91.3 |
| Hamilton | WQMS | 96.7 |
| | WHOH | 103.5 |
| Kent | WKSU-FM | *88.1 |
| Lancaster | WHOK-FM | 95.5 |
| Lima | WIMA-FM | 102.1 |
| Marietta | WCMO | *89.3 |
| Marion | WMRN-FM | 106.9 |
| Miamisburg | WFCJ | 93.9 |
| Middletown | WPFB-FM | 105.9 |
| Mt. Vernon | WMVO-FM | 93.7 |
| New Concord | WMCO-FM | *91.9 |
| Newark | WCLT-FM | 100.3 |
| Oxford | WMUB | *88.5 |
| | WOXR | 97.7 |
| Piqua | WPTW-FM | 95.7 |
| Port Clinton | WRWR-FM | 94.5 |
| Portsmouth | WPAY-FM | 104.1 |
| Salem | WSOM-FM | 105.1 |
| Sandusky | WLEC-FM | 102.7 |
| Springfield | WBLY-FM | 103.9 |
| | WEEC-FM | 100.7 |
| Steubenville | WSTV-FM | 103.5 |
| Toledo | WSPD-FM | 101.5 |
| | WMHE | 92.5 |
| | WTDS | *91.3 |
| | WTOL-FM | 104.7 |
| | WTRT | 99.9 |
| Westerville | WOBN | *91.5 |
| Wooster | WWST-FM | 104.5 |
| Yellow Springs | WYSO | *91.5 |
| Youngstown | WKBN-FM | 98.9 |
| | WBBW-FM | 93.3 |
| | WRED | 101.1 |
| Zanesville | WHIZ-FM | 102.5 |

## OKLAHOMA

| Location | C.L. | Mc. |
|---|---|---|
| Durant | KSEO-FM | 107.3 |
| Norman | WNAD-FM | *90.9 |
| Oklahoma City | KOKH | *88.9 |
| | KIOO | 100.5 |
| | KEFM | 94.7 |
| | KYFM | 98.9 |
| Shawnee | KBGC | *89.9 |
| Stillwater | KOSU-FM | *91.7 |
| | KSPI-FM | 93.9 |
| Tulsa | KWGS | *90.5 |
| | KIHI | 95.5 |
| | KOCW | 97.5 |
| | KOGM-FM | 92.9 |

## OREGON

| Location | C.L. | Mc. |
|---|---|---|
| Eugene | KRVM | *91.9 |
| | KEED-FM | 93.1 |
| | KFMY | 97.9 |
| | KUGN-FM | 99.1 |
| | KWAX | *91.1 |
| Grants Pass | KGPD | 96.9 |
| Medford | KBOY-FM | 95.3 |
| Oretech | KTEC | *88.1 |
| Portland | KOAP-FM | 92.3 |
| | KGMG | 95.5 |
| | KOIN-FM | 101.1 |
| | KPDQ-FM | 105.3 |
| | KPFM | 97.1 |
| | KPOJ-FM | 98.7 |
| | KQFM | 100.3 |
| | KRRC | *89.3 |

## PENNSYLVANIA

| Location | C.L. | Mc. |
|---|---|---|
| Allentown | WFMZ | 100.7 |
| | WAEB-FM | 104.1 |
| Altoona | WVAM-FM | 100.1 |
| | WFBG-FM | 98.1 |
| Beaver Falls | WBVP-FM | 106.7 |
| Bethlehem | WGPA-FM | 95.1 |
| Bloomsburg | WHLM-FM | 106.5 |
| Boyertown | WBYC-FM | 107.5 |
| Braddock | WLOA-FM | 96.9 |
| Butler | WBUT-FM | 97.7 |
| Carlisle | WHYL-FM | 102.3 |
| Chambersburg | WCHA-FM | 95.1 |
| Dubois | WCED-FM | 102.1 |
| Easton | WEST-FM | 107.9 |
| | WEEX-FM | 99.9 |
| Erie | WWYN-FM | 99.9 |
| Glenside | WIFI | 92.5 |
| Harrisburg | WHP-FM | 97.3 |
| | WMSP | 94.9 |
| Havertown | WHHS | *89.3 |
| Hazleton | WAZL-FM | 97.9 |
| Jenkintown | WIBF | 103.9 |
| Johnstown | WARD-FM | 92.1 |
| | WJAC-FM | 95.5 |
| Lancaster | WGAL-FM | 101.3 |
| | WDAC | 94.5 |
| | WLAN-FM | 96.9 |
| Lebanon | WLBR-FM | 100.1 |
| Meadville | WMGW-FM | 100.3 |
| Montrose | WPEL-FM | 96.5 |
| Oil City | WDJR | 98.5 |
| Palmyra | WJWR | 92.1 |
| Philadelphia | WCAU-FM | 98.1 |
| | WPBS-FM | 105.3 |
| | WDAS-FM | 105.3 |
| | WFIL-FM | 102.1 |
| | WFLN | 95.7 |
| | WHAT-FM | 96.5 |
| | WHYY | *90.9 |
| | WIFI | 92.5 |
| | WIBG-FM | 94.1 |
| | WIP-FM | 93.3 |
| | WPEN-FM | 102.9 |
| | WPWT | *91.7 |
| | WQAL | 106.1 |
| | WRTI-FM | *90.1 |
| | WXPN | *88.9 |
| Pittsburgh | KDKA-FM | 92.9 |
| | WAZZ | 105.9 |
| | WRYT-FM | 96.1 |
| | WDUQ | *91.5 |
| | WINE | 107.9 |
| | WILY | 105.9 |
| | WJAS-FM | 99.7 |
| | WKJF | 93.7 |
| | WPIT-FM | 101.5 |
| | WWSW-FM | 94.5 |
| Pottsville | WPPA-FM | 101.9 |
| Red Lion | WGCB-FM | 96.1 |
| Scranton | WGBI-FM | 101.3 |
| | WUSV | *88.9 |
| Sharon | WPIC-FM | 102.9 |
| State College | WDFM | *91.1 |
| Sunbury | WKOK-FM | 94.1 |
| Towanda | WTTC-FM | 92.7 |
| Tyrone | WGMR-FM | 101.1 |
| Warren | WRRN | 92.3 |
| Washington | WJPA-FM | 104.3 |
| Waynesboro | WAYZ-FM | 101.5 |
| Wilkes-Barre | WBRE-FM | 98.5 |
| | WYZZ | 103.3 |
| Williamsport | WLYC-FM | 105.1 |
| | WRAK-FM | 100.3 |
| York | WNOW-FM | 105.7 |

## RHODE ISLAND

| Location | C.L. | Mc. |
|---|---|---|
| Cranston | WLOV | 99.9 |
| Providence | WPJB-FM | 105.1 |
| | WICE-FM | 107.7 |
| | WPFM | 95.5 |
| | WPRO-FM | 92.3 |
| | WXCN | 101.5 |
| Woonsocket | WWON-FM | 106.3 |

## SOUTH CAROLINA

| Location | C.L. | Mc. |
|---|---|---|
| Anderson | WCAC | 101.1 |
| Charleston | WCSC-FM | 96.9 |
| | WTMA-FM | 95.1 |
| Clemson | WSBF-FM | *88.1 |
| Columbia | WCOS-FM | 97.9 |
| | WNOK-FM | 104.7 |
| | WUSC-FM | *89.9 |
| Dillon | WDSC-FM | 92.9 |
| Greenville | WESC-FM | 92.5 |
| | WFBC-FM | 93.7 |
| | WMVU-FM | 94.5 |
| Laurens-Clinton | WLBG-FM | 100.5 |
| Rock Hill | WRHI-FM | 98.3 |
| Seneca | WSNW-FM | 98.1 |
| Spartanburg | WSPA-FM | 98.9 |
| Sumter | WFIG-FM | 101.3 |

## TENNESSEE

| Location | C.L. | Mc. |
|---|---|---|
| Bristol | WOPI-FM | 96.9 |
| Chattanooga | WDOD-FM | 96.5 |
| | WLON | 106.5 |
| Cleveland | WCLE-FM | 100.7 |
| Collegedale | WSMC-FM | *88.1 |
| Franklin | WFLT-FM | 100.1 |
| Gallatin | WFMG | 104.5 |
| Greeneville | WGRV-FM | 94.9 |
| Jackson | WTJS-FM | 104.1 |
| Johnson City | WJCW-FM | 100.7 |
| Kingsport | WKPT-FM | 98.5 |
| Knoxville | WBIR-FM | 93.3 |
| | WKCS | *91.1 |
| | WUOT | *91.9 |
| Memphis | WMC-FM | 99.7 |
| | WMPS-FM | 97.1 |
| | WDIA-FM | 102.7 |
| Nashville | WFMB | 105.9 |
| | WSIX-FM | 97.5 |
| Sevierville | WSEV-FM | 102.1 |

## TEXAS

| Location | C.L. | Mc. |
|---|---|---|
| Abilene | KACC-FM | *91.1 |
| | KFMN | 99.3 |
| Alvin | KAJC-FM | 102.1 |
| Amarillo | KGNC-FM | 93.1 |
| Austin | KHFI | 98.3 |
| | KAZZ | 95.5 |
| | KTBC-FM | 93.7 |
| | KUT-FM | *90.7 |
| Beaumont | KHCB-FM | 105.7 |
| | KRIC-FM | 97.5 |
| Brownwood | KHPC | 88.1 |
| Cleburne | KCLE-FM | 94.9 |
| Corpus Christi | KMFM | 95.5 |
| Dallas | KIXL-FM | 104.5 |
| | KNER | *88.1 |
| | KRLD-FM | 92.5 |
| | KLIF-FM | 98.7 |
| | WFAA-FM | 97.9 |
| | WRR-FM | 101.1 |
| | KVTT | *91.7 |
| | KQRO | 102.9 |
| Denton | KDNT-FM | 106.3 |
| DiBoll | KSPL-FM | 95.5 |
| Dumas | KDDD-FM | 95.3 |
| El Paso | KVOF-FM | *88.5 |
| | KHMS | 94.7 |
| Ft. Worth | WBAP-FM | 96.3 |
| | KXFM | 99.5 |
| | KFJZ-FM | 97.1 |
| Gainesville | KGAF-FM | 94.5 |
| Harlingen | KELT | 94.5 |
| Highland Pk. | KUIL-FM | 103.7 |
| Hillsboro | KHBR-FM | 102.3 |
| Houston | KHGM | 102.9 |
| | KHUL | 95.7 |
| | KFMK | 97.9 |
| | KODA-FM | 99.1 |
| | KARO | 94.5 |
| | KOST | 100.3 |
| | KQUE | 102.9 |
| | KRBE | 104.1 |
| | KXYZ-FM | 96.5 |
| | KTRH-FM | 101.1 |
| | KUHF | *91.3 |
| Lubbock | KRKH-FM | 93.7 |
| | KBFM | 96.3 |
| | KTXT-FM | *91.9 |
| Marshall | KMHT-FM | 97.3 |
| Midland | KNFM | 92.3 |
| Mt. Pleasant | KIMP-FM | 96.1 |
| Odessa | KQIP | 96.7 |
| | KWMO | 99.1 |
| Pampa | KBMF-FM | 100.3 |
| Plainview | KHBL | *88.1 |
| Port Arthur | KFMP | 93.3 |
| San Antonio | KISS | 99.5 |
| | KEEZ | 97.3 |
| | KAKI-FM | 98.1 |
| | KITY | 92.9 |
| Sinton | KTOD-FM | 101.3 |
| Texarkana | KTAL-FM | 98.1 |
| Tyler | KSLT | 93.1 |
| Waco | KEFC | 95.5 |
| | WACO | 99.9 |

## UTAH

| Location | C.L. | Mc. |
|---|---|---|
| Ephraim | KEPH | *88.9 |
| Logan | KUSU-FM | *88.1 |
| Provo | KBYU-FM | *88.9 |
| Salt Lake City | KCPX-FM | 98.7 |
| | KLUB-FM | 97.1 |
| | KSL-FM | 100.3 |

## VIRGINIA

| Location | C.L. | Mc. |
|---|---|---|
| Arlington | WAVA-FM | 105.1 |
| | WCCV-FM | 97.5 |
| Charlottesville | WINA-FM | 95.3 |
| | WTJU | 91.3 |
| Crewe | WSVS-FM | 104.7 |
| Farmville | WFLO-FM | 95.7 |
| Fredericksburg | WFVA-FM | 101.5 |
| Gretna | WMNA-FM | 103.3 |
| Harrisonburg | WEMC | *91.7 |
| | WSVA-FM | 100.7 |
| Lynchburg | WWOD-FM | 100.1 |
| Manassas | WPRW-FM | 106.7 |
| Marion | WMEV-FM | 93.9 |
| Martinsville | WMVA-FM | 96.3 |
| Newport News | WGH-FM | 97.3 |
| Norfolk | WMTI | *91.5 |
| | WRVC | 102.5 |
| | WTAR-FM | 95.7 |
| | WYFI-FM | 99.7 |
| Portsmouth | WAVY-FM | 96.9 |
| Richmond | WCOD | 98.1 |
| | WRFK | 91.1 |
| | WRVA-FM | 94.5 |
| | WRNL-FM | 102.1 |
| Roanoke | WDBJ-FM | 94.9 |
| | WLRJ | 92.3 |
| | WROV-FM | 103.7 |
| | WSLS-FM | 99.1 |
| South Boston | WHLF-FM | 97.5 |
| South Norfolk | WFOS | *90.5 |
| Staunton | WSGM-FM | 93.5 |
| Williamsburg | WCWM | 89.1 |
| Winchester | WRFL | 92.5 |
| Woodbridge | WXRA | 105.9 |

## WASHINGTON

| Location | C.L. | Mc. |
|---|---|---|
| Bellingham | KGMI-FM | 92.9 |
| Cheney | KEWC-FM | *89.9 |
| Edmonds | KGFM | 105.3 |
| Lynden | KLYN-FM | 106.5 |
| Opportunity | KZUN-FM | 96.1 |
| Seattle | KING-FM | 98.1 |
| | KETO-FM | 101.5 |
| | KGMJ | 95.7 |
| | KIRO-FM | 100.7 |
| | KISW | 99.9 |
| | KLSN | 96.5 |
| | KMCS | 98.9 |
| | KOL-FM | 94.1 |
| | KUOW | 94.9 |
| Spokane | KREM-FM | 92.9 |
| | KXLY-FM | 99.9 |
| | KHQ-FM | 98.1 |
| Tacoma | KCPS | 90.9 |
| | KLAY-FM | 106.3 |
| | KTNT-FM | 97.3 |
| | KTOY | *91.7 |
| | KTWR | 103.9 |
| Yakima | KNDX-FM | 106.3 |

## WEST VIRGINIA

| Location | C.L. | Mc. |
|---|---|---|
| Beckley | WBKW | 99.5 |
| Charleston | WKAZ-FM | 97.5 |
| | WKNA | 98.5 |
| Huntington | WKEE-FM | 100.5 |
| | WMUL | *88.1 |
| Martinsburg | WEPM-FM | 94.3 |
| Morgantown | WAJR-FM | 99.3 |
| Oak Hill | WOAY-FM | 94.1 |
| Wheeling | WKWK-FM | 97.3 |
| | WWVA-FM | 98.7 |

## WISCONSIN

| Location | C.L. | Mc. |
|---|---|---|
| Appleton | WLFM | *91.1 |
| Chilton | WHKW | *89.3 |
| Colfax | WHWC | *88.3 |
| Delafield | WHAD | *90.7 |
| Eau Claire | WIAL | 94.1 |
| Fort Atkinson | WFAW | 107.3 |
| Green Bay | WBAY-FM | 101.1 |
| Greenfield Twp. | WWCF | 94.9 |
| Highland | WHHI | 91.3 |
| Highland Twp. | WHSA | *89.9 |
| Janesville | WCLO-FM | 99.9 |
| La Crosse | WHLA | *90.3 |
| Madison | WHA-FM | *88.7 |
| | WIBA-FM | 101.5 |
| | WISM-FM | 98.1 |
| | WMFM | 104.1 |
| | WRVB-FM | 102.5 |
| Merrill | WLIN | 100.7 |
| Milwaukee | WFMR | 96.5 |
| | WMIL-FM | 95.7 |
| | WISN-FM | 97.3 |
| | WRIT-FM | 102.9 |
| | WMKE | 102.1 |
| | WQFM | 93.3 |
| | WTMJ-FM | 94.1 |
| Monroe | WEKZ-FM | 93.7 |
| Racine | WRJN-FM | 100.7 |
| Rice Lake | WJMC-FM | 96.3 |
| Sparta | WCOW-FM | 97.1 |
| Stevens Point | WSPT-FM | 97.9 |
| Watertown | WTTN-FM | 104.7 |
| Waukesha | WAUX-FM | 106.1 |
| Wausau | WHRM | *91.9 |
| Wauwatosa | WTOS | 103.7 |
| West Bend | WBKV-FM | 92.5 |
| Wisc. Rapids | WFHR-FM | 103.3 |

## WYOMING

| Location | C.L. | Mc. |
|---|---|---|
| Cheyenne | KVOW-FM | 106.3 |

# U. S. FM Stations by Call Letters

Abbreviation: (s)—broadcasts stereo

| C.L. | Location |
|---|---|
| KAAR | Oxnard, Calif. |
| KABC-FM | Los Angeles, Calif. |
| KACE-FM | Riverside, Calif. |
| KADI | St. Louis, Mo. |
| KAFE | Oakland, Calif. |
| KAFI | Auburn, Calif. |
| KAFM | Salina, Kans. |
| KAIM-FM | Honolulu, Hawaii |
| KAJC-FM | Alvin, Tex. |
| KAJS | Newport Beach, Calif. |
| KAKC | Tulsa, Okla. |
| KAKI | San Antonio, Tex. |
| KALB-FM | Alexandria, La. |
| KALH | Denver, Colo. |
| KALW | San Francisco, Calif. |
| KAMS | Mammoth Spring, Ark. |
| KANG | St. Louis, Mo. |
| KANT-FM | Lancaster, Calif. |
| KANU | Lawrence, Kans.(s) |
| KANW | Albuquerque, N.Mex. |
| KAPP | Redondo Beach, Calif. |
| KARK | Little Rock, Ark. |
| KARM-FM | Fresno, Calif. |
| KARO | Houston, Tex. |
| KASK-FM | Ontario, Calif. |
| KASU | Jonesboro, Ark. |
| KATT | Woodland, Calif. |
| KATY-FM | San Luis Obispo, Calif. |
| KAZZ | Austin, Tex. |
| KBAY | San Francisco, Calif. |
| KBBI | Los Angeles, Calif. |
| KBBL | Wichita, Kans. |
| KBBM | Hayward, Calif. |
| KBBW | San Diego, Calif. |
| KBCA | Los Angeles, Calif. |
| KBCL-FM | Shreveport, La. |
| KBCO | San Francisco, Calif. |
| KBEE-FM | Modesto, Calif. |
| KBEY | Kansas City, Mo. |
| KBFI | Boise, Idaho |
| KBFM | Lubbock, Tex. |
| KBIM-FM | Roswell, N.Mex. |
| KBIQ | Los Angeles, Calif. |
| KBMF | Pampa, Tex. |
| KBMS | Los Angeles, Calif. |
| KBOA-FM | Kennett, Mo. |
| KBOI-FM | Boise, Idaho |
| KBOY-FM | Medford, Oreg. |
| KBTM-FM | Jonesboro, Ark. |
| KBUZ-FM | Mesa, Ariz. |
| KBYR-FM | Anchorage, Alaska(s) |
| KBYU-FM | Provo, Utah |
| KCAL-FM | Redlands, Calif. |
| KCBH | Beverly Hills, Calif.(s) |
| KCBS-FM | San Francisco, Calif. |
| KCFM | St. Louis, Mo. (s) |
| KCHV-FM | Coachella, Calif. |
| KCIB-FM | Fresno, Calif. |
| KCJC | Kansas City, Kans. |
| KCLE-FM | Cleburne, Tex. |
| KCMB-FM | Wichita, Kans. |
| KCMI | Los Angeles, Calif. |
| KCMK | Kansas City, Mo. |
| KCMO-FM | Kansas City, Mo.(s) |
| KCMS-FM | Manitou Springs, Colo. |
| KCOM | Omaha, Nebr. |
| KCPA-FM | Dallas, Tex. |
| KCPS | Tacoma, Wash. |
| KCPX-FM | Salt Lake City, Utah |
| KCRA-FM | Sacramento, Calif. |
| KCRW | Santa Monica, Calif. |
| KCSM | San Mateo, Calif. |
| KCUI | Pella, Ia. |
| KCUR-FM | Kansas City, Mo. |
| KCVN | Stockton, Calif. |
| KCVR-FM | Lodi, Calif. |
| KDB-FM | Santa Barbara, Calif. |
| KDDD-FM | Dumas, Tex. |
| KDEF-FM | Albuquerque, N.Mex. |
| KDEN-FM | Denver, Colo. |
| KDFC | San Francisco, Calif. |
| KDKA-FM | Pittsburgh, Pa. |
| KDMC | Corpus Christi, Tex. |
| KDMI | Des Moines, Iowa(s) |
| KDNT-FM | Denton, Tex. |
| KDPS | Des Moines, Iowa |
| KDUO | Riverside, Calif.(s) |
| KDVR | Sioux City, Ia. |
| KDWC | West Covina, Calif. |
| KEAR | San Francisco, Calif. |
| KEAX | National City, Calif. |
| KEBJ | Phoeniz, Ariz. |
| KEBR | Sacramento, Calif. |
| KEBS | San Diego, Calif. |
| KEED-FM | Springfield-Eugene, Oregon |
| KEEN-FM | San Jose, Calif. |
| KEEZ | San Antonio, Tex. |
| KEFC | Waco, Tex. |
| KEFM | Oklahoma City, Okla. |
| KEFW | Honolulu, Hawaii |
| KELE | Phoenix, Ariz. |
| KELT | Harlingen, Tex. |
| KEMO | St. Louis, Mo. |
| KERN-FM | Bakersfield, Calif. |
| KETO-FM | Seattle, Wash.(s) |
| KEYM | Santa Maria, Calif.(s) |
| KEZE | Anaheim, Calif. |
| KFAB-FM | Omaha, Nebr. |
| KFAC-FM | Los Angeles, Calif. |
| KFAM-FM | St. Cloud, Minn |
| KFBK-FM | Sacramento, Calif. |
| KFCA | Phoenix, Ariz. |
| KFGQ-FM | Boone, Iowa |
| KFH-FM | Wichita, Kans. |
| KFIL | Santa Ana, Calif. |
| KFJC | Mountainview, Calif. |

| C.L. | Location |
|---|---|
| KFJZ | Fort Worth, Tex. |
| KFMB-FM | San Diego, Calif. |
| KFMC | Portland, Oreg. |
| KFMH | Colorado Springs, Colo. |
| KFMK | Houston, Tex.(s) |
| KFML-FM | Denver, Colo. |
| KFMM | Tucson, Ariz. |
| KFMN | Abilene, Tex. |
| KFMP | Port Arthur, Tex.(s) |
| KFMQ | Lincoln, Nebr. |
| KFMU | Los Angeles, Calif.(s) |
| KFMV | Minneapolis, Minn |
| KFMW | San Bernardino, Calif. |
| KFMX | San Diego, Calif. |
| KFMY | Eugene, Oreg.(s) |
| KFNB | Oklahoma City, Okla. |
| KFOX-FM | Long Beach, Calif. |
| KFRC-FM | San Francisco, Calif. |
| KFUO-FM | Clayton, Mo. |
| KGAF-FM | Gainesville, Tex. |
| KGB-FM | San Diego, Calif.(s) |
| KGBN-FM | Caldwell, Idaho |
| KGFM | Edmonds, Wash. |
| KGGK | Garden Grove, Calif.(s) |
| KGLA | Los Angeles, Calif. |
| KGMG | Portland, Oreg.(s) |
| KGMI | Bellingham, Wash. |
| KGNC-FM | Amarillo, Tex. |
| KGO-FM | San Francisco, Calif. |
| KGPO | Grants Pass, Oreg. |
| KGUD-FM | Santa Barbara, Calif. |
| KHAK-FM | Cedar Rapids, Iowa |
| KHBL | Plainview, Tex. |
| KHBR-FM | Hillsboro, Tex. |
| KHCB | Houston, Tex. |
| KHFI | Austin, Tex. |
| KHFM | Albuquerque, N.Mex. |
| KHFR-FM | Monterey, Calif. |
| KHGM | Beaumont, Tex.(s) |
| KHIP | San Francisco, Calif. |
| KHIQ | Sacramento, Calif. |
| KHJ-FM | Los Angeles, Calif. |
| KHMS | El Paso, Tex. |
| KHOF | Los Angeles, Calif. |
| KHOM-FM | Turlock, Calif. |
| KHPC | Brownwood, Tex. |
| KHQ-FM | Spokane, Wash. |
| KHSC | Arcata, Calif. |
| KHUL | Houston, Tex. |
| KHVR | Bijou, Calif. |
| KHYI | Fremont, Calif. |
| KICN | Omaha, Nebr. |
| KIEM | Eureka, Calif. |
| KIHI | Tulsa, Okla. |
| KIMP-FM | Mt. Pleasant, Tex. |
| KING-FM | Seattle, Wash. |
| KIOO | Oklahoma, Okla. |
| KIRO-FM | Seattle, Wash. |
| KISA | Kansas City, Mo. |
| KISS | San Antonio, Tex. |
| KISW | Seattle, Wash.(s) |
| KITH | Phoenix, Ariz. |
| KITT | San Diego, Calif. |
| KITY | San Antonio, Tex. |
| KIXL-FM | Dallas, Tex.(s) |
| KJAZ | Alameda, Calif. |
| KJEM-FM | Okla. City, Okla. |
| KJLM | San Diego, Calif. |
| KJML | Sacramento, Calif. |
| KJPO | Fresno, Calif. |
| KJRG | Newton, Kans. |
| KJSB | Houston, Tex. |
| KLAC-FM | Los Angeles, Calif. |
| KLAY-FM | Tacoma, Wash. |
| KLCN-FM | Blytheville, Ark. |
| KLFM | Beverly Hills, Calif. |
| KLIR-FM | Denver, Colo. |
| KLIZ-FM | Brainerd, Minn. |
| KLOA-FM | Ridgecrest, Calif. |
| KLON | Long Beach, Calif. |
| KLRO | San Diego, Calif. |
| KLSN | Seattle, Wash.(s) |
| KLUB-FM | Salt Lake City, Utah |
| KLYD-FM | Bakersfield, Calif. |
| KLYN-FM | Lynden, Wash. |
| KMAK-FM | Fresno, Calif. |
| KMAX | Sierra Madre, Calif. |
| KMCP | Portland, Oreg. |
| KMCS | Seattle, Wash. |
| KMER | Fresno, Calif. |
| KMFM | Tularosa, N. Mex. |
| KMHT | Marshall, Tex. |
| KMJ-FM | Fresno, Calif. |
| KMLA | Los Angeles, Calif.(s) |
| KMLB-FM | Monroe, La. |
| KMMK | Little Rock, Ark. |
| KMOX-FM | St. Louis, Mo. |
| KMUW | Wichita, Kans. |
| KMYC-FM | Marysville, Calif. |
| KMUZ | Santa Barbara, Calif.(s) |
| KNBC-FM | San Francisco, Calif. |
| KNDE-FM | Aztec, N.Mex. |
| KNDX | Yakima, Wash. |
| KNEB-FM | Scottsbluff, Nebr. |
| KNER | Dallas, Tex. |
| KNEV | Reno, Nev. |
| KNEW-FM | Scottsbluff, Nebr. |
| KNFM | Midland, Tex. |
| KNIK-FM | Anchorage, Alaska |
| KNOB | Long Beach, Calif. |
| KNOF | St. Paul, Minn. |
| KNX-FM | Los Angeles, Calif. |
| KOA-FM | Denver, Colo |
| KOAP-FM | Portland, Ore. |
| KOCW | Tulsa, Okla. |

| C.L. | Location |
|---|---|
| KODA-FM | Houston, Tex. |
| KOGM-FM | Tulsa, Okla. |
| KOGO | San Diego, Calif. |
| KOIN-FM | Portland, Oreg. |
| KOKH | Oklahoma City, Okla. |
| KOL-FM | Seattle, Wash. |
| KONG-FM | Visalia, Calif.(s) |
| KOOL-FM | Phoenix, Ariz. |
| KORK | Las Vegas, Nev. |
| KOSE-FM | Osceola, Ark. |
| KOST | Dallas, Tex. |
| KOSU-FM | Stillwater, Okla. |
| KOTN-FM | Pine Bluff, Ark. |
| KOY-FM | Phoenix, Ariz. |
| KOZE-FM | Lewiston, Idaho |
| KPAT | Albuquerque, N Mex. |
| KPCS | Pasadena, Calif. |
| KPDQ-FM | Portland, Ore. |
| KPEN | Atherton, Calif.(s) |
| KPFA | Berkeley, Calif. |
| KPFB | Berkeley, Calif. |
| KPFK | Los Angeles, Calif. |
| KPFM | Portland, Oreg.(s) |
| KPGM | Los Altos, Calif. |
| KPLR-FM | St. Louis, Mo. |
| KPOI-FM | Honolulu, Hawaii |
| KPOJ-FM | Portland, Oreg. |
| KPOL-FM | Los Angeles, Calif. |
| KPPS-FM | Parsons, Kans. |
| KPRI | San Diego, Calif.(s) |
| KPRN | Seattle, Wash. |
| KPSD | Dallas, Tex. |
| KPSR | Palm Springs, Calif. |
| KQAL-FM | Omaha, Nebr.(s) |
| KQBY-FM | San Francisco, Calif. |
| KQFM | Portland, Oreg. |
| KQIP | Odessa, Tex. |
| KQRO | Dallas, Tex. |
| KQUE | Houston, Tex. |
| KQXR | Bakersfield, Calif. |
| KRAK-FM | Stockton, Calif. |
| KRAM-FM | Las Vagas, Nev. |
| KRBE | Houston, Tex.(s) |
| KRCC | Colorado Springs, Colo. |
| KRCW | Santa Barbara, Calif. |
| KRE-FM | Berkeley, Calif. |
| KREM-FM | Spokane, Wash. |
| KREX-FM | Grand Junction, Colo. |
| KRFM | Fresno, Calif. |
| KRHM | Los Angeles, Calif.(s) |
| KRIC-FM | Beaumont, Tex. |
| KRKD-FM | Los Angeles, Calif. |
| KRKH-FM | Lubbock, Tex. |
| KRKY | Denver, Colo. |
| KRLD-FM | Dallas, Tex. |
| KRMD-FM | Shreveport, La. |
| KRNW | Boulder, Colo. |
| KRNY-FM | Kearney-Holdrege, Nebraska |
| KRON-FM | San Francisco, Calif. |
| KROS-FM | Clinton, Iowa |
| KROW | Santa Barbara, Calif. |
| KROY-FM | Sacramento, Calif. |
| KRPM | San Jose, Calif. |
| KRRC | San Jose, Calif. |
| KRSN-FM | Los Alamos, N.Mex. |
| KRVM | Eugene, Oreg. |
| KSCO | Santa Cruz, Calif. |
| KSBW-FM | Salinas, Calif. |
| KSDA | La Sierra, Calif. |
| KSDB-FM | Manhattan, Kans. |
| KSOS | San Diego, Calif. |
| KSEA | San Diego, Calif. |
| KSEO-FM | Durant, Okla. |
| KSFM | Dallas, Tex.(s) |
| KSFR | San Francisco, Calif. |
| KSFV | San Fernando, Calif. |
| KSFX | San Francisco, Calif. |
| KSHE | Crestwood, Mo. |
| KSHS | Colorado Springs, Colo. |
| KSJO-FM | San Jose, Calif.(s) |
| KSL-FM | Salt Lake City, Utah |
| KSLA | Seattle, Wash.(s) |
| KSLH | St. Louis, Mo. |
| KSLT | Tyler, Tex. |
| KSMA-FM | Santa Maria, Calif. |
| KSO-FM | Des Moines, Iowa |
| KSPC | Claremont, Calif. |
| KSPI-FM | Stillwater, Okla. |
| KSPL-FM | Diboll, Tex. |
| KSRF | Santa Monica, Calif. |
| KSTE | Emporia, Kans. |
| KSTL-FM | St. Louis, Mo. |
| KSTN-FM | Stockton, Calif. |
| KSUI | Iowa City, Iowa |
| KSWI-FM | Omaha, Nebr. |
| KSYN | Joplin, Mo. |
| KTAL | Texarkana, Tex. |
| KTAP | Tucson, Ariz. |
| KTAR-FM | Phoenix, Ariz. |
| KTBC-FM | Austin, Tex.(s) |
| KTCF | Cedar Falls, Iowa |
| KTEC | Oretech, Oreg. |
| KTGM | Denver, Colo. |
| KTIM | San Rafael, Calif. |
| KTIS-FM | Minneapolis, Minn. |
| KTJO-FM | Ottawa, Kans. |
| KTNT-FM | Tacoma, Wash. |
| KTOD | Mt. Pleasant, Tex. |
| KTOP-FM | Topeka, Kans. |
| KTOY | Tacoma, Wash. |
| KTRB-FM | Modesto, Calif. |
| KTRH-FM | Houston, Tex. |
| KTSR | Kansas City, Mo. |
| KTTS-FM | Springfield, Mo. |
| KTWR | Tacoma, Wash. |
| KTXT-FM | Lubbock, Tex. |
| KTYM-FM | Inglewood, Calif. |
| KUDE-FM | Oceanside, Calif. |

| C.L. | Location |
|---|---|
| KUDU-FM | Ventura-Oxnard, Calif. |
| KUER | Salt Lake City, Utah |
| KUFM | El Cajon, Calif. |
| KUFY | Redwood City, Calif. |
| KUGN-FM | Eugene, Oreg. |
| KUHF | Houston, Tex. |
| KUMD-FM | Duluth, Minn. |
| KUOA-FM | Siloam Springs, Ark. |
| KUOH | Honolulu, Hawaii |
| KUOW | Seattle, Wash. |
| KUPD-FM | Tempe, Ariz. |
| KUSC | Los Angeles, Calif. |
| KUT-FM | Austin, Tex. |
| KUTE | Glendale, Calif. |
| KVCR | San Bernardino, Calif. |
| KVEC-FM | San Luis Obispo, Calif. |
| KVEN-FM | Ventura, Calif. |
| KVFM | San Hernando, Calif. |
| KVIL | Highland Pk., Tex. |
| KVOF-FM | El Paso, Tex. |
| KVOK | Honolulu, Hawaii |
| KVOP-FM | Plainview, Tex. |
| KVOR-FM | Colorado Springs, Colo. |
| KVSC | Logan, Utah |
| KVTT | Dallas, Tex. |
| KWAR | Waverly, Iowa |
| KWAX | Eugene, Oreg. |
| KWFM | Minneapolis, Minn.(s) |
| KWG-FM | Stockton, Calif. |
| KWGS | Tulsa, Okla. |
| KWIX | St. Louis, Mo. |
| KWIZ-FM | Santa Ana, Calif. |
| KWJB-FM | Globe, Ariz. |
| KWKH-FM | Shreveport, La. |
| KWME | Walnut Creek, Calif.(s) |
| KWMO | Odessa, Tex. |
| KWOA-FM | Worthington, Minn. |
| KWOC-FM | Poplar Bluff, Mo. |
| KWPC-FM | Muscatine, Iowa |
| KWPM-FM | West Plains, Mo. |
| KXFM | Fort Worth, Tex. |
| KXJK-FM | Forrest City, Ark. |
| KXLU | Los Angeles, Calif. |
| KXOA | Sacramento, Calif. |
| KXQR | Fresno, Calif.(s) |
| KXRQ | Sacramento, Calif. |
| KXTR | Kansas City, Mo. |
| KXYZ-FM | Houston, Tex. |
| KYA-FM | San Francisco, Calif. |
| KYEW | Phoenix, Ariz. |
| KYFM | Oklahoma City, Okla. |
| KYSM-FM | Mankato, Minn. |
| KYW-FM | Cleveland, Ohio |
| KZAM | Seattle, Wash. |
| KZFM | Cortez, Colo. |
| KZOM | Oklahoma City, Okla. |
| KZUN-FM | Opportunity, Wash |
| WAAB-FM | Worcester, Mass. |
| WAAM-FM | Parkersburg, W.Va. |
| WABC-FM | New York, N.Y. |
| WABE | Atlanta, Ga. |
| WABI-FM | Bangor, Maine |
| WABQ | Cleveland, Ohio |
| WABX | Detroit, Mich. |
| WABZ-FM | Albemarle, N.C. |
| WACO | Waco, Tex. |
| WAEB-FM | Cincinnati, Ohio |
| WAEF | Syracuse, N.Y. |
| WAER | Syracuse, N.Y. |
| WAEZ | Miami Beach, Fla. |
| WAHR-FM | Miami Beach, Fla. |
| WAIC | San Juan, P.R. |
| WAIR-FM | Winston-Salem, N.C. |
| WAIV | Indianapolis, Ind. |
| WAJC | Indianapolis, Ind. |
| WAJM | Montgomery, Ala. |
| WAJP | Joliet, Ill. |
| WAJR-FM | Morgantown, W.Va. |
| WAKR-FM | Akron, Ohio |
| WAKW-FM | Cincinnati, Ohio |
| WALK-FM | Patchogue, N.Y. |
| WAMC | Albany, N.Y. |
| WAMF | Amherst, Mass. |
| WAMU-FM | Washington, D.C. |
| WAPI-FM | Birmingham, Ala. |
| WAPS | Akron, Ohio |
| WAQE-FM | Towson, Md.(s) |
| WARD-FM | Johnstown, Pa. |
| WARK-FM | Hagerstown, Md. |
| WARL-FM | Arlington, Va. |
| WARN-FM | Fort Pierce, Fla. |
| WASA-FM | Havre De Grace, Md. |
| WASH | Washington, D.C.(s) |
| WATR-FM | Waterbury, Conn. |
| WAUG-FM | Augusta, Ga. |
| WAUX-FM | Waukesha, Wis. |
| WAVI-FM | Dayton, Ohio |
| WAVQ | Atlanta, Ga. |
| WAVU-FM | Albertville, Ala. |
| WAVY-FM | Portsmouth, Va. |
| WAWZ-FM | Zarephath, N.J. |
| WAYL | Minneapolis, Minn.(s) |
| WAYZ-FM | Waynesboro, Pa. |
| WAZL-FM | Hazelton, Pa. |
| WAZZ | Pittsburgh, Pa. |
| WBAA-FM | W. Lafayette, Ind. |
| WBAB-FM | Babylon, N.Y. |
| WBAI | New York, N.Y. |
| WBAP-FM | Ft. Worth, Tex. |
| WBAY-FM | Green Bay, Wis. |
| WBBB-FM | Burlington, N.C.(s) |
| WBBC | Jackson, Mich. |
| WBBF-FM | Rochester, N.Y. |
| WBBM-FM | Chicago, Ill. |
| WBBO-FM | Forest City, N.C. |
| WBBQ-FM | Augusta, Ga. |
| WBBR-FM | E. St. Louis, Ill. |
| WBBS | Crawfordsville, Ind. |
| WBBW-FM | Youngstown, Ohio |

| C.L. | Location |
|---|---|
| WBCB-FM | Levittown-Fairless Hills, Pa. |
| WBCI-FM | Williamsburg, Va. |
| WBCM-FM | Bay City, Mich. |
| WBCN | Boston, Mass. |
| WBEN-FM | Buffalo, N.Y. |
| WBET-FM | Brockton, Mass. |
| WBEX-FM | Chillicothe, Ohio |
| WBEZ | Chicago, Ill. |
| WBFG | Detroit, Mich. |
| WBFM | New York, N.Y. |
| WBFO | Buffalo, N.Y. |
| WBGO | Newark, N.J. |
| WBGU | Bowling Green, Ohio |
| WBIE-FM | Marietta, Ga. |
| WBIR-FM | Knoxville, Tenn. |
| WBIV | Wethersfield, N.Y. |
| WBJC | Baltimore, Md. |
| WBKV-FM | West Bend, Wis. |
| WBKW | Beckley, W.Va. |
| WBKY | Lexington, Ky. |
| WBLY-FM | Springfield, Ohio |
| WBMI | Meridan, Conn. |
| WBNS-FM | Columbus, Ohio (s) |
| WBOE | Cleveland, Ohio |
| WBOR | Brunswick, Maine |
| WBOS-FM | Brookline, Mass. |
| WBRB-FM | Mt. Clements, Mich. |
| WBRC | Birmingham, Ala. |
| WBRE-FM | Wilkes-Barre, Pa. |
| WBSM-FM | New Bedford, Mass. |
| WBST | Muncie, Ind. |
| WBUF | Buffalo, N.Y. |
| WBUR | Boston, Mass. |
| WBUT-FM | Butler, Pa. |
| WBUY-FM | Lexington, N.C. |
| WBVA | Woodbridge, Va. |
| WBVP-FM | Beaver Falls, Pa. |
| WBWC | Berea, Ohio |
| WBZ-FM | Boston, Mass. |
| WCAC | Anderson, S.C. |
| WCAO-FM | Baltimore, Md. |
| WCAU-FM | Philadelphia, Pa. |
| WCBC-FM | Anderson, Ind. |
| WCBE | Columbus, Ohio |
| WCBM-FM | Baltimore, Md. |
| WCBS-FM | New York, N.Y. |
| WCCC-FM | Hartford, Conn. |
| WCCV-FM | Charlottesville, Va. |
| WCED-FM | Dubois, Pa. |
| WCFM | Williamstown, Mass. |
| WCHA-FM | Chambersburg, Pa. |
| WCHD | Detroit, Mich. |
| WCKR-FM | Miami, Fla. |
| WCLE-FM | Cleveland, Tenn. |
| WCLI-FM | Corning, N.Y. |
| WCLM | Chicago, Ill. |
| WCLO-FM | Janesville, Wis. |
| WCLT-FM | Newark, Ohio |
| WCMC-FM | Wildwood, N.J. |
| WCME-FM | Brunswick, Maine |
| WCMF-FM | Rochester, N.Y.(s) |
| WCMI-FM | Ashland, Ky. |
| WCMO | Marietta, Ohio |
| WCMR-FM | Elkhart, Ind. |
| WCNB-FM | Connersville, Ind. |
| WCNO | Canton, Ohio(s) |
| WCOD | Richmond, Va. |
| WCOH-FM | Newnan, Ga. |
| WCOL-FM | Columbus, Ohio |
| WCOP-FM | Boston, Mass. |
| WCOS-FM | Columbia, S.C. |
| WCOU-FM | Lewiston, Maine |
| WCOW-FM | Sparta, Wis. |
| WCPO-FM | Cincinnati, Ohio |
| WCPS-FM | Tarbor, N.C. |
| WCRB-FM | Waltham, Mass.(s) |
| WCRF-FM | Cleveland, Ohio |
| WCRT-FM | Birmingham, Ala. |
| WCSC-FM | Charleston, S.C. |
| WCSI-FM | Columbus, Ind. |
| WCSQ | Central Square, N.Y. |
| WCTA-FM | Andalusia, Ala. |
| WCTC-FM | New Brunswick, N.J. |
| WCTM | Eaton, Ohio |
| WCTW-FM | New Castle, Ind. |
| WCUE-FM | Akron, Ohio |
| WCUM-FM | Cumberland, Md. |
| WCUY-FM | Cleveland Hts., Ohio |
| WCWM | Williamsburg, Va. |
| WDAC | Lancaster, Pa. |
| WDAE-FM | Tampa, Fla. |
| WDAS-FM | Philadelphia, Pa. |
| WDBJ-FM | Roanoke, Va. |
| WDBO-FM | Orlando, Fla. |
| WDBQ-FM | Dubuque, Iowa |
| WDDE | Hamden, Conn. |
| WDDS-FM | Syracuse, N.Y. |
| WDEL-FM | Wilmington, Del. |
| WDET-FM | Detroit, Mich. |
| WDFM | State College, Pa. |
| WDGO | Cleveland, Ohio(s) |
| WDHA-FM | Dover, N.J.(s) |
| WDHF | Chicago, Ill. |
| WDIA-FM | Memphis, Tenn. |
| WDJK | Atlanta, Ga. |
| WDJR | Oil City, Pa. |
| WDMB-FM | Statesville, N.C. |
| WDNC-FM | Durham, N.C. |
| WDOC-FM | Prestonsburg, Ky. |
| WDOD-FM | Chattanooga, Tenn. |
| WDOK-FM | Cleveland, Ohio |
| WDOV-FM | Dover, Del. |
| WDRC-FM | Hartford, Conn. |
| WDSC-FM | Dillon, S.C. |
| WDSU-FM | New Orleans, La. |
| WDTM | Detroit, Mich.(s) |
| WDTR | Detroit, Mich. |
| WDUB | Granville, Ohio |

| C.L. | Location |
|---|---|
| WDUN-FM | Gainesville, Ga. |
| WDUQ | Pittsburgh, Pa. |
| WDUZ-FM | Green Bay, Wis. |
| WDWS-FM | Champaign, Ill. |
| WEAV-FM | Plattsburgh, N.Y. |
| WEAW-FM | Evanston, Ill. |
| WEBH | Chicago, Ill. |
| WEBQ-FM | Harrisburg, Ill. |
| WEBR-FM | Buffalo, N.Y. |
| WECW | Elmira, N.Y. |
| WEDK | Springfield, Mass. |
| WEEC | Springfield, Ohio |
| WEED-FM | Rocky Mount, N.C. |
| WEEI-FM | Boston, Mass. |
| WEEP-FM | Pittsburgh, Pa. |
| WEEX-FM | Easton, Pa. |
| WEFA | Waukegan, Ill. |
| WEFM | Chicago, Ill. (s) |
| WEGO-FM | Concord, N.C. |
| WEHS | Chicago, Ill. |
| WEIV | Ithaca, N.Y. |
| WEKZ-FM | Monroe, Wis. |
| WELF | Glen Ellyn, Ill. |
| WELG | Elgin, Ill. |
| WEMC | Harrisonburg, Va. |
| WEMP-FM | Milwaukee, Wis. |
| WENR-FM | Chicago, Ill. |
| WEOK-FM | Poughkeepsie, N.Y. |
| WEOL-FM | Elyria, Ohio |
| WEPM-FM | Martinsburg, W.Va. |
| WEPS | Elgin, Ill. |
| WEQR | Goldsboro, N.C. |
| WERC-FM | Erie, Pa. |
| WERE-FM | Cleveland, Ohio |
| WERI-FM | Westerly, R.I. |
| WERS | Boston, Mass. |
| WESC-FM | Greenville, S.C. |
| WEST-FM | Easton, Pa. |
| WETL | South Bend, Ind. |
| WETN | Wheaton, Ill. |
| WEVC | Evansville, Ind |
| WEVD-FM | New York, N.Y. |
| WEWO-FM | Laurinburg, N.C. |
| WFAA-FM | Dallas, Tex. |
| WFAH-FM | Alliance, Ohio |
| WFAN | Washington, D.C. |
| WFAS-FM | White Plains, N.Y. |
| WFAU-FM | Augusta, Maine |
| WFAW | Fort Atkinson, Wis. |
| WFBC-FM | Greenville, S.C. |
| WFBE | Flint, Mich. |
| WFBG-FM | Altoona, Pa. |
| WFBM-FM | Indianapolis, Ind. |
| WFBS-FM | Winston-Salem, N.C. |
| WFCI | Franklin, Ind. |
| WFCJ | Miamisburg, Ohio |
| WFCR | Amherst, Mass. |
| WFDS-FM | Baltimore, Md. |
| WFFM | Cincinnati, Ohio |
| WFGM-FM | Fitchburg, Mass. |
| WFHA-FM | Red Bank, N.J. |
| WFHR-FM | Wisconsin Rapids, Wis. |
| WFID | Rio Piedras, P.R. |
| WFIG | Sumter, S.C. |
| WFIL-FM | Philadelphia, Pa. |
| WFIN-FM | Findlay, Ohio (s) |
| WFIU | Bloomington, Ind. |
| WFLA-FM | Tampa, Fla. |
| WFLM | Ft. Lauderdale, Fla. (s) |
| WFLN-FM | Philadelphia, Pa. (s) |
| WFLO | Farmville, Va. |
| WFLT-FM | Franklin, Tenn. |
| WFLY | Troy, N.Y. |
| WFMA | Rocky Mount, N.C. |
| WFMB | Nashville, Tenn. |
| WFMD-FM | Frederick, Md. |
| WFME | Detroit, Mich. |
| WFMF | Chicago, Ill. |
| WFMG | Gallatin, Tenn. |
| WFMH-FM | Cullman, Ala. |
| WFMI | Montgomery, Ala. |
| WFML | Washington, Ind. |
| WFMM-FM | Baltimore, Md. |
| WFMQ | Chicago, Ill. (s) |
| WFMS | Indianapolis, Ind. |
| WFMT | Chicago, Ill. (s) |
| WFMU | East Orange, N.J. |
| WFMW-FM | Madisonville, Ky. |
| WFMX | Statesville, N.C. |
| WFMZ | Allentown, Pa. |
| WFNC-FM | Fayetteville, N.C. |
| WFNQ | Hartford, Conn. |
| WFNS-FM | Burlington, N.C. |
| WFOB-FM | Fostoria, Ohio |
| WFOL | Hamilton, Ohio |
| WFOS | South Norfolk, Va. |
| WFPK | Louisville, Ky. |
| WFPL | Louisville, Ky. |
| WFQM | San Juan, P.R. |
| WFRO-FM | Fremont, Ohio |
| WFST-FM | Caribou, Maine |
| WFSU-FM | Tallahassee, Fla. |
| WFUL-FM | Fulton, Ky. |
| WFUR-FM | Grand Rapids, Mich. |
| WFUV | New York, N.Y. |
| WFVA-FM | Fredericksburg, Va. |
| WGAL-FM | Lancaster, Pa. |
| WGAR-FM | Cleveland, Ohio |
| WGAU-FM | Athens, Ga. |
| WGAY | Silver Spring, Md. |
| WGBH-FM | Cambridge, Mass. |
| WGBI-FM | Scranton, Pa. |
| WGBS-FM | Miami, Fla. |
| WGCB-FM | Red Lion, Pa. |
| WGCS | Goshen, Ind. |
| WGEM-FM | Quincy, Ill. (s) |
| WGFM | Schenectady, N.Y. (s) |
| WGGC | Glasgow, Ky. |
| WGGM | Taylorville, Ill. |
| WGH-FM | Newport News, Va. |
| WGHF | Newton, Conn. |
| WGHJ | Lawrence, Mass. |
| WGKA-FM | Atlanta, Ga. |
| WGLM | Richmond, Ind. |
| WGMR | Tyrone, Pa. |
| WGMS-FM | Washington, D.C. |
| WGNB | St. Petersburg, Fla. |
| WGNC-FM | Gastonia, N.C. |
| WGPA-FM | Bethlehem, Ga. |
| WGPM | Detroit, Mich. |
| WGPS | Greensboro, N.C. |
| WGR-FM | Buffalo, N.Y. |
| WGRE | Greencastle, Ind. |
| WGRV-FM | Greenville, Tenn. |
| WGTB-FM | Washington, D.C. |
| WGTS-FM | Takoma Park, Md. |
| WGUC | Cincinnati, Ohio |
| WGVE | Gary, Ind. |
| WGWR-FM | Asheboro, N.C. |
| WGYA | Interlochen, Mich. |
| WHA-FM | Madison, Wis. |
| WHAD | Delafield, Wis. |
| WHAI-FM | Greenfield, Mass. |
| WHAT-FM | Philadelphia, Pa. |
| WHAV-FM | Haverhill, Mass. |
| WHBC-FM | Canton, Ohio |
| WHBF-FM | Rock Island, Ill. (s) |
| WHCI | Hartford City, Ind. |
| WHCN | Hartford, Conn. |
| WHCU-FM | Ithaca, N.Y. |
| WHDH-FM | Boston, Mass. |
| WHDL-FM | Allegheny, N.Y. |
| WHEN-FM | Syracuse, N.Y. |
| WHFB-FM | Benton Harbor, Mich. |
| WHFI | West Paterson, N. J. |
| WHFM | Rochester, N.Y. |
| WHFS | Bethesda, Md. (s) |
| WHHI | Highland, Wis. |
| WHHS | Havertown, Pa. |
| WHIM-FM | Providence, R.I. |
| WHIO-FM | Dayton, Ohio |
| WHIZ-FM | Zanesville, Ohio |
| WHK-FM | Cleveland, Ohio |
| WHKP-FM | Hendersonville, N.C. |
| WHKW | Chilton, Wis. |
| WHKY-FM | Hickory, N.C. |
| WHLA | Holmen, Wis. |
| WHLD-FM | Niagara Falls, N. Y. |
| WHLI-FM | Hempstead, N.Y. |
| WHLM-FM | Bloomsburg, Pa. |
| WHMA-FM | Anniston, Ala. |
| WHNC-FM | Henderson, N.C. |
| WHO-FM | Des Moines, Iowa |
| WHOH | Hamilton, Ohio |
| WHOK-FM | Lancaster, Ohio |
| WHOM-FM | New York, N.Y. |
| WHOO-FM | Orlando, Fla. (s) |
| WHOS-FM | Decatur, Ala. |
| WHP-FM | Harrisburg, Pa. |
| WHPE-FM | High Point, N.C. |
| WHPR | Highland Park, Mich. |
| WHPS | High Point, N.C. |
| WHRB-FM | Cambridge, Mass. |
| WHRM | Wausau, Wis. |
| WHSA | Highland Twp., Wis. |
| WHSR-FM | Winchester, Mass. |
| WHTG-FM | Eatontown, N.J. |
| WHUS | Storrs, Conn. |
| WHWC | Colfax, Wis. |
| WHYL-FM | Carlisle, Pa. |
| WHYN-FM | Springfield, Mass. |
| WHYY | Philadelphia, Pa. |
| WIAL | Eau Claire, Wis. |
| WIAN | Indianapolis, Ind. |
| WIBA-FM | Madison, Wis. |
| WIBC-FM | Indianapolis, Ind. |
| WIBG-FM | Philadelphia, Pa. |
| WICB | Ithaca, N.Y. |
| WIFE | Buffalo, N.Y. |
| WIFI | Glenside, Pa. |
| WIFM-FM | Elkin, N.C. |
| WIKY-FM | Evansville, Ind. |
| WIL-FM | St. Louis, Mo. |
| WILL-FM | Urbana, Ill. |
| WIMA-FM | Lima, Ohio |
| WINA-FM | Charlottesville, Va. |
| WINE-FM | Kenmore, N.Y. |
| WINF-FM | Manchester, Conn. |
| WINZ-FM | Miami, Fla. |
| WIP-FM | Philadelphia, Pa. |
| WIPR-FM | San Juan, P.R. |
| WIRA-FM | Ft. Pierce, Fla. |
| WIRQ | Rochester, N.Y. |
| WISH-FM | Indianapolis, Ind. (s) |
| WISK | Medford, Mass. |
| WISN-FM | Milwaukee, Wis. |
| WISZ-FM | Madison, Wis. |
| WITA-FM | San Juan, P.R. |
| WITH-FM | Baltimore, Md. |
| WITZ-FM | Jasper, Ind. |
| WIUS | Christiansted, V.I. |
| WJAC-FM | Johnstown, Pa. (s) |
| WJAS-FM | Pittsburgh, Pa. |
| WJAX-FM | Jacksonville, Fla. |
| WJBC-FM | Bloomington, Ill. |
| WJBK-FM | Detroit, Mich. |
| WJBL-FM | Holland, Mich. |
| WJBO-FM | Baton Rouge, La. |
| WJBR | Wilmington, Del. (s) |
| WJCD-FM | Seymour, Ind. |
| WJDX-FM | Jackson, Miss. |
| WJEF-FM | Grand Rpds., Mich. (s) |
| WJEH-FM | Gallipolis, Ohio |
| WJEJ-FM | Hagerstown, Md. |
| WJGG | Houghton, Mich. |
| WJHL-FM | Johnson City, Tenn. |
| WJIM-FM | Lansing, Mich. |
| WJIV | Cherry Valley, N.Y. |
| WJJD-FM | Chicago, Ill. |
| WJLK-FM | Asbury Park, N.J. |
| WJLN | Birmingham, Ala. |
| WJMC-FM | Rice Lake, Wis. |
| WJOF | Athens, Ala. |
| WJOL-FM | Joliet, Ill. |
| WJR-FM | Detroit, Mich. |
| WJRZ | Newark, N.J. |
| WJTN-FM | Jamestown, N.K. |
| WJW-FM | Cleveland, Ohio |
| WJWR | Palmyra, Pa. |
| WJZZ | Bridgeport, Conn. |
| WKAK | Kankakee, Ill. |
| WKAQ-FM | San Juan, P.R. |
| WKAR-FM | E. Lansing, Mich. |
| WKAT-FM | Miami, Fla. |
| WKAY-FM | Glasgow, Ky. |
| WKAZ-FM | Charleston, W.Va. |
| WKBC-FM | Winston-Salem, N.C. |
| WKBN-FM | Youngstown, Ohio |
| WKBR-FM | Manchester, N.H. |
| WKBV-FM | Richmond, Ind. |
| WKCQ | Berlin, N.H. |
| WKCR-FM | New York, N.Y. |
| WKCS | Knoxville, Tenn. |
| WKDN-FM | Camden, N.J. |
| WKEE-FM | Huntington, W.Va. |
| WKFM | Chicago, Ill. (s) |
| WKIC-FM | Hazard, Ky. |
| WKIP-FM | Poughkeepsie, N.Y. |
| WKIS-FM | Orlando, Fla. |
| WKIX-FM | Raleigh, N.C. |
| WJKF | Pittsburgh, Pa. (s) |
| WKLF-FM | Clanton, Ala. |
| WKLS | Marietta, Ga. |
| WKLW-FM | Grand Rapids, Mich. |
| WKMH-FM | Dearborn, Mich. |
| WKNA | Charleston, W.Va. (s) |
| WKOF | Hopkinsville, Ky. |
| WKOK-FM | Sunbury, Pa. |
| WKOP-FM | Binghamton, N.Y. |
| WKOX-FM | Framingham, Mass. |
| WKPT-FM | Kingsport, Tenn |
| WKRC-FM | Cincinnati, Ohio |
| WKRG-FM | Mobile, Ala. |
| WKRT-FM | Cortland, N.Y. |
| WKSD | Kewanee, Ill. |
| WKSU-FM | Kent, Ohio |
| WKTM-FM | Mayfield, Ky. |
| WKWK-FM | Wheeling, W.Va. |
| WKYB-FM | Paducah, Ky. |
| WLAD-FM | Danbury, Conn. |
| WLAG-FM | LaGrange, Ga. |
| WLAN-FM | Lancaster, Pa. |
| WLAP-FM | Lexington, Ky. |
| WLAV-FM | Grand Rapids, Mich. |
| WLBG-FM | Laurens-Clinton, S.C. |
| WLBH-FM | Mattoon, Ill. |
| WLBR-FM | Lebanon, Pa. |
| WLDM | Oak Park, Mich. (s) |
| WLDS-FM | Jacksonville, Ill. |
| WLEC-FM | Sandusky, Ohio |
| WLET-FM | Toccoa, Ga. |
| WLFM | Appleton, Wis. |
| WLIN | Merrill, Wis. |
| WLIR | Hicksville, N.Y. (s) |
| WLLH-FM | Lowell, Mass. |
| WLNA-FM | Peekskill, N.Y. |
| WLOA-FM | Braddock, Pa. (s) |
| WLOB-FM | Portland, Maine |
| WLOE-FM | Leaksville, N.C. |
| WLOL-FM | Minneapolis, Minn. |
| WLOM | Chattanooga, Tenn. |
| WLOS-FM | Asheville, N.C. |
| WLOV | Cranston, R.I. |
| WLRJ | Roanoke, Va. |
| WLVL | Louisville, Ky. |
| WLYC-FM | Williamsport, Pa. |
| WMAL-FM | Washington, D.C. |
| WMAM-FM | Marinette, Wis. |
| WMAQ-FM | Chicago, Ill. |
| WMAS-FM | Springfield, Mass. |
| WMAX-FM | Grand Rapids, Mich. |
| WMAZ-FM | Macon, Ga. |
| WMBD-FM | Peoria, Ill. |
| WMBI-FM | Chicago, Ill. |
| WMBM | Miami Beach, Fla. |
| WMBO-FM | Auburn, N.Y. |
| WMBR-FM | Jacksonville, Fla. |
| WMCF | Memphis, Tenn. |
| WMCO | New Concord, Ohio |
| WMCR | Kalamazoo, Mich. |
| WMDE | Greensboro, N.C. (s) |
| WMER | Celina, Ohio |
| WMEV-FM | Marion, Va. |
| WMFM | Madison, Wis. |
| WMFP | Ft. Lauderdale, Fla. |
| WMFR-FM | High Point, N.C. |
| WMGW-FM | Meadville, Pa. |
| WMHC | South Hadley, Mass. |
| WMHE | Toledo, Ohio |
| WMIL-FM | Milwaukee, Wis. |
| WMIT | Marion, N.C. |
| WMIV | S. Bristol, N.Y. |
| WMIX-FM | Mt. Vernon, Ill. |
| WMLS-FM | Sylacauga, Ala. |
| WMLW | Milwaukee, Wis. |
| WMNA-FM | Gretna, Va. |
| WMPS-FM | Memphis, Tenn. |
| WMRI-FM | Marion, Ind. |
| WMRN-FM | Marion, Ohio |
| WMRO-FM | Aurora, Ill. |
| WMRT | Lansing, Mich. |
| WMSP | Harrisburg, Pa. |
| WMTH | Park Ridge, Ill. |
| WMTI | Norfolk, Va. |
| WMTW-FM | Mt. Washington, N.H. |
| WMUA | Amherst, Mass. |
| WMUB | Oxford, Ohio |
| WMUL | Huntington, W.Va. |
| WMUN | Muncie, Ind. |
| WMUU-FM | Greenville, S.C. |
| WMUZ | Detroit, Mich. |
| WMVA-FM | Martinsville, Va. (s) |
| WMVB-FM | Millville, N.J. |
| WMVO-FM | Mount Vernon, Ohio |
| WMZK | Detroit, Mich. |
| WNAD-FM | Norman, Okla. |
| WNAS | New Albany, Ind. |
| WNAV-FM | Annapolis, Md |
| WNBC-FM | New York, N.Y. |
| WNBF-FM | Binghamton, N.Y. |
| WNBH-FM | New Bedford, Mass. |
| WNCN | New York, N.Y. |
| WNCO-FM | Ashland, Ohio |
| WNDA | Huntsville, Ala. |
| WNBD-FM | Daytona Beach, Fla. |
| WNEM-FM | Bay City, Mich. |
| WNES-FM | Central City, Ky. |
| WNEW-FM | New York, N.Y. |
| WNEX-FM | Macon, Ga. |
| WNGO-FM | Mayfield, Ky. |
| WNHC-FM | New Haven, Conn. |
| WNIB | Chicago, Ill. |
| WNIC | DeKalb, Ill. |
| WNNJ-FM | Newton, N.J. |
| WNOB | Cleveland, Ohio (s) |
| WNOK-FM | High Point, N.C. |
| WNOS-FM | High Point, N.C. |
| WNOW-FM | York, Pa. |
| WNSH | Highland Park, Ill. |
| WNSL-FM | Laurel, Miss. |
| WMTH | Winnetka, Ill. |
| WNTI | Hackettstown, N.J. |
| WNUR | Evanston, Ill. |
| WNWC-FM | Arlington Hts., Ill. |
| WNYC-FM | New York, N.Y. |
| WNYE | New York, N.Y. |
| WOAK | Royal Oak, Mich. |
| WOAY-FM | Oak Hill, W.Va. |
| WOBN | Westerville, Ohio |
| WOC-FM | Davenport, Iowa |
| WOCB-FM | W. Yarmouth, Mass. |
| WOHS-FM | Shelby, N.C. |
| WOI-FM | Ames, Iowa |
| WOIO | Cincinnati, Ohio |
| WOIV | De Ruyter, N.Y. |
| WOKZ-FM | Alton, Ill. |
| WOL-FM | Washington, D.C. |
| WOMC | Royal Oak, Mich. (s) |
| WOMI-FM | Owensboro, Ky. |
| WOMP-FM | Bellaire, Ohio |
| WONO | Syracuse, N.Y. |
| WOOD-FM | Grand Rapids, Mich. |
| WOPA-FM | Oak Park, Ill. |
| WOPI-FM | Bristol, Tenn. |
| WOR-FM | New York, N.Y. |
| WORA-FM | Mayaguez, P.R. |
| WORX-FM | Madison, Ind. |
| WOSC-FM | Fulton, N.Y. |
| WOSJ-FM | Atlantic City, N.J. |
| WOSU-FM | Columbus, Ohio |
| WOTW-FM | Nashua, N.H. |
| WOUB-FM | Athens, Ohio |
| WOW-FM | Omaha, Nebr. |
| WOXR | Oxford, Ohio |
| WPAC-FM | Patchogue, N.Y. |
| WPAD-FM | Paducah, Ky. |
| WPAT-FM | Paterson, N.J. |
| WPAY-FM | Portsmouth, Ohio (s) |
| WPBC-FM | Minneapolis, Minn. |
| WPBS | Philadelphia, Pa. |
| WPCA-FM | Philadelphia, Pa. |
| WPEL-FM | Montrose, Pa. |
| WPEN-FM | Philadelphia, Pa. |
| WPEX-FM | Pensacola, Fla. (s) |
| WPFB-FM | Middletown, Ohio (s) |
| WPFM | Providence, R.I. (s) |
| WPGO-FM | Bradbury Hts., Md. |
| WPGI | Pittsburgh, Pa. |
| WPIC-FM | Sharon, Pa. |
| WPIT-FM | Pittsburgh, Pa. |
| WPJB-FM | Providence, R.I. |
| WPKM | Tampa, Fla. |
| WPLM-FM | Plymouth, Mass. |
| WPLO-FM | Atlanta, Ga. |
| WPPA-FM | Pottsville, Pa. |
| WPRB | Princeton, N.J. |
| WPRK | Winter Park, Fla. |
| WPRM | San Juan, P.R. |
| WPRO-FM | Providence, R.I. |
| WPRS-FM | Paris, Ill. |
| WPRW-FM | Manassas, Va. |
| WPSR | Evansville, Ind. |
| WPTF-FM | Raleigh, N.C. |
| WPTH | Fort Wayne, Ind. |
| WPTW-FM | Piqua, Ohio |
| WPWT | Philadelphia, Pa. |
| WQAL | Philadelphia, Pa. |
| WQDC-FM | Midland, Mich. |
| WQFM | Milwaukee, Wis. |
| WQMS | Hamilton, Ohio |
| WQRS-FM | Detroit, Mich. |
| WQXI-FM | Atlanta, Ga. |
| WQXR-FM | New York, N.Y. (s) |
| WQXT-FM | Palm Beach, Fla. |
| WRAJ-FM | Anna, Ill. |
| WRAK-FM | Williamsport, Pa. |
| WRAL-FM | Raleigh, N.C. |
| WRAY-FM | Princeton, Ind. |
| WRBL-FM | Columbus, Ga. |
| WRBS | Baltimore, Md. |
| WRC-FM | Washington, D.C. |
| WRCM | New Orleans, La. |
| WRED | Youngstown, Ohio |

| C.L. | Location |
|---|---|
| WREO-FM | Ashtabula, Ohio |
| WREV-FM | Reidsville, N.C. |
| WRFD-FM | Worthington-Columbus, Ohio |
| WRFK | Richmond, Va. |
| WRFL | Winchester, Va. |
| WRFM | Woodside, N.Y. |
| WRFS-FM | Alexander City, Ala. |
| WRHS | Park Forest, Ill. |
| WRIT-FM | Milwaukee, Wis. |
| WRJN-FM | Racine, Wis. |
| WRJR | Lewiston, Maine |
| WRKO-FM | Boston, Mass. |
| WRLB | Long Branch, N.J.(s) |
| WRLX | Hopkinsville, Ky. |
| WRLD-FM | Lanett, Ala. |
| WRMI-FM | Morris, Ill. |
| WRNJ | Atlantic City, N.J. |
| WRNL-FM | Richmond, Va. |
| WRNW | Mount Kisco, N.Y. |
| WROC-FM | Rochester, N.Y. |
| WROK-FM | Rockford, Ill. |
| WROW-FM | Albany, N.Y. |
| WROY-FM | Carmi, Ill. |
| WRPI | Troy, N.Y. |
| WRPN-FM | Ripon, Wis. |
| WRR-FM | Dallas, Tex. |
| WRRN | Warren, Pa. |
| WRSW-FM | Warsaw, Ind. |
| WRTC-FM | Hartford, Conn. |
| WRTI-FM | Philadelphia, Pa. |
| WRUF-FM | Gainesville, Fla. |
| WRUN-FM | Utica, N.Y. |
| WRVA-FM | Richmond, Va. |
| WRVB-FM | Madison, Wis. |
| WRVC | Norfolk, Va. |
| WRVP | New York, N.Y. |
| WRWR | Port Clinton, Ohio |
| WRXO-FM | Roxboro, N.C. |
| WRYT | Pittsburgh, Pa. |
| WSAB | Mt. Carmel, Ill. |
| WSAI-FM | Cincinnati, Ohio |
| WSAM-FM | Saginaw, Mich. |
| WSB-FM | Atlanta, Ga. |
| WSBC-FM | Chicago, Ill.(s) |
| WSBF-FM | Clemson, S.C. |
| WSCB | Springfield, Mass. |

| C.L. | Location |
|---|---|
| WSEI | Effingham, Ill. |
| WSEV-FM | Sevierville, Tenn. |
| WSFM | Birmingham, Ala.(s) |
| WSHS | Floral Park, N.Y. |
| WSID | Baltimore, Md. |
| WSIU | Carbondale, Ill. |
| WSJG | Hallandale, Fla. |
| WSJS-FM | Winston-Salem, N.C. |
| WSKS | Wabash, Ind. |
| WSIX-FM | Nashville, Tenn. |
| WSLM-FM | Salem, Ind. |
| WSLN | Delaware, Ohio |
| WSLS-FM | Roanoke, Va. |
| WSMC-FM | Collegedale, Tenn. |
| WSMD-FM | Waldorf, Md. |
| WSMI-FM | Litchfield, Ill. |
| WSNJ-FM | Brigeton, N.J. |
| WSNW-FM | Seneca, S.C. |
| WSOC-FM | Charlotte, N.C. |
| WSOM | Salem, Ohio |
| WSON-FM | Henderson, Ky |
| WSOU | S. Orange, N.J. |
| WSOY-FM | Decatur, Ill. |
| WSPA-FM | Spartanburg, S.C.(s) |
| WSPD-FM | Toledo, Ohio |
| WSPE | Springville, N.Y. |
| WSPT-FM | Stevens Point, Wis. |
| WSRW-FM | Hillsboro, Ohio |
| WSTC-FM | Stamford, Conn. |
| WSTP-FM | Salisbury, N.C. |
| WSTR-FM | Sturgis, Mich. |
| WSTV-FM | Steubenville, Ohio |
| WSVA-FM | Harrisonburg, Va. |
| WSVS-FM | Crewe, Va. |
| WSWM | East Lansing, Mich.(s) |
| WSYR-FM | Syracuse, N.Y.(s) |
| WTAD-FM | Quincy, Ill. |
| WTAG-FM | Worcester, Mass. |
| WTAR | Norfolk, Va.(s) |
| WTAX-FM | Springfield, Ill. |
| WTBC-FM | Tuscaloosa, Ala. |
| WTBO-FM | Cumberland, Md. |
| WTBS | Cambridge, Mass. |
| WTCX | St. Petersburg, Fla. |
| WTDS | Toledo, Ohio |
| WTFM | Babylon, N.Y. |

| C.L. | Location |
|---|---|
| WTHI-FM | Terre Haute, Ind. |
| WTHS | Miami, Fla. |
| WTIC-FM | Hartford, Conn. |
| WTJS-FM | Jackson, Tenn. |
| WTJU | Charlottesville, Va. |
| WTMA-FM | Charleston, S.C. |
| WTMJ-FM | Milwaukee, Wis. |
| WTNC-FM | Thomasville, N.C. |
| WTOA | Trenton, N.J. |
| WTOC-FM | Savannah, Ga. |
| WTOF | Canton, Ohio |
| WTOL-FM | Toledo, Ohio |
| WTOP-FM | Washington, D.C. |
| WTOS | Wauwatosa, Wis. |
| WTRC-FM | Elkhart, Ind. |
| WTRT | Toledo, Ohio |
| WTSB-FM | Lumberton, N.C. |
| WTSV-FM | Claremont, N.H. |
| WTTC-FM | Towanda, Pa. |
| WTTR-FM | Westminster, Md. |
| WTTV-FM | Bloomington, Ind. |
| WTUN | Tampa, Fla. |
| WTVB-FM | Coldwater, Mich. |
| WTVN-FM | Columbus, Ohio |
| WUCB-FM | Chicago, Ill. |
| WULX-FM | Richmond, Ind. |
| WUNC | Chapel Hill, N.C. |
| WUOA | Tuscaloosa, Ala. |
| WUOM | Ann Arbor, Mich. |
| WUOT | Knoxville, Tenn. |
| WUPI | Lynn, Mass. |
| WUSC-FM | Columbia, S.C. |
| WUST-FM | Bethesda, Md. |
| WUSV | Scranton, Pa. |
| WVAM-FM | Altoona, Pa. |
| WVBR-FM | Ithaca, N.Y. |
| WVCG-FM | Coral Gables, Fla. |
| WVEC-FM | Hampton, Va. |
| WVGR-FM | Grand Rapids, Mich. |
| WVHC | Hempstead, N.Y. |
| WVJS-FM | Owensboro, Ky. |
| WVKC-FM | Galesburg, Ill. |
| WVKO-FM | Columbus, Ohio |
| WVLN-FM | Olney, Ill. |
| WVMC-FM | Mt. Carmel, Ill. |
| WVNA-FM | Tuscumbia, Ala. |

| C.L. | Location |
|---|---|
| WVNJ-FM | Newark, N.J. |
| WVOT-FM | Wilson, N.C. |
| WVOX-FM | New Rochelle, N.Y. |
| WVSH | Huntington, Ind. |
| WVST | St. Petersburg, Fla. |
| WVTS | Terre Haute, Ind. |
| WWCF | Greenfield, Wis. |
| WWCO-FM | Waterbury, Conn. |
| WWDC-FM | Washington, D.C. |
| WWGP-FM | Sanford, N.C. |
| WWHG-FM | Hornell, N.Y. |
| WWHI | Muncie, Ind. |
| WWIL-FM | Ft. Lauderdale, Fla. |
| WWJ-FM | Detroit, Mich. |
| WWKS | Macomb, Ill. |
| WWMT | New Orleans, La. |
| WWOD-FM | Lynchburg, Va. |
| WWOL-FM | Buffalo, N.Y. |
| WWON-FM | Woonsocket, R.I. |
| WWPB | Miami, Fla. |
| WWST-FM | Wooster, Ohio |
| WWSW-FM | Pittsburgh, Pa. |
| WWTV-FM | Cadillac, Mich. |
| WWVA-FM | Wheeling, W.Va. |
| WWWS | Greenville, N.C. |
| WWYN | Erie, Pa. |
| WXCN | Providence, R.I. |
| WXFM | Elmwood Park, Ill. |
| WXHR | Cambridge, Mass. |
| WXPN | Philadelphia, Pa. |
| WXTC | Annapolis, Md. |
| WXTO-FM | Grand Rapids, Mich. |
| WXUR-FM | Media, Pa. |
| WXYZ-FM | Detroit, Mich. |
| WYAK | Sarasota, Fla.(s) |
| WYBC-FM | New Haven, Conn. |
| WYCA | Hammond, Ind. |
| WYCE | Warwick, R.I. |
| WYCR | York-Hanover, Pa. |
| WYFI | Norfolk, Va.(s) |
| WYFM | Charlotte, N.C. |
| WYFS | Winston-Salem, N.C. |
| WYSO | Yellow Springs, Ohio |
| WYZZ | Wilkes-Barre, Pa. |
| WZFM | Jacksonville, Fla. |
| WZIP-FM | Cincinnati, Ohio |

# Canadian FM Stations by Location

| Location | C.L. | Mc. |
|---|---|---|
| Brampton, Ont. | CHIC-FM | 102.1 |
| Brantford, Ont. | CKPC-FM | 92.1 |
| Cornwall, Ont. | CJSS-FM | 104.5 |
| Edmonton, Alta. | CFRN-FM | 100.3 |
| | CJCA-FM | 99.5 |
| | CKUA-FM | 98.1 |
| Ft. William, Ont. | CKPR-FM | 94.3 |
| Halifax, N.S. | CHNS-FM | 96.1 |
| Kingston, Ont. | CFRC-FM | 91.9 |
| | CKLC-FM | 99.5 |
| | CKWS-FM | 96.3 |
| Kitchener, Ont. | CKCR-FM | 96.7 |
| Lethbridge, Alta. | CHEC-FM | 100.9 |
| London, Ont. | CFPL-FM | 95.9 |
| Montreal, Que. | CBF-FM | 95.1 |
| | CBM-FM | 100.7 |
| | CFCF-FM | 106.5 |
| Oshawa, Ont. | CKLB-FM | 93.5 |
| Ottawa, Ont. | CBO-FM | 103.3 |
| | CFMO-FM | 93.9 |
| Quebec, Que. | CHRC-FM | 98.1 |
| Rimouski, Que. | CJBR-FM | 101.5 |
| St. Catharines, Ont. | CKTB-FM | 97.7 |
| Sherbrooke, Que. | CHLT-FM | 102.7 |
| Timmins, Ont. | CKGB-FM | 94.5 |
| Toronto, Ont. | CBC-FM | 99.1 |
| | CFRB-FM | 99.9 |
| | CHFI-FM | 98.1 |
| | CJRT-FM | 91.1 |
| Vancouver, B.C. | CBU-FM | 105.7 |
| | CHQM-FM | 103.5 |
| Verdun, Que. | CKVL-FM | 96.9 |
| Victoria, B.C. | CKDA-FM | 98.5 |
| Windsor, Ont. | CKLW-FM | 93.9 |
| Winnipeg, Man. | CJOB-FM | 97.5 |

# Canadian FM Stations by Call Letters

| C.L. | Location |
|---|---|
| CBC-FM | Toronto, Ont. |
| CBF-FM | Montreal, Que. |
| CBM-FM | Montreal, Que. |
| CBO-FM | Ottawa, Ont. |
| CBU-FM | Vancouver, B.C. |
| CFCF-FM | Montreal, Que. |
| CFPL-FM | London, Ont. |
| CFRA-FM | Ottawa, Ont. |
| CFRB-FM | Toronto, Ont. |
| CFRC-FM | Kingston, Ont. |
| CFRN-FM | Edmonton, Alta. |
| CHEC-FM | Lethbridge, Alta. |
| CHFI-FM | Toronto, Ont. |
| CHLT-FM | Sherbrooke, Que. |
| CHNS-FM | Halifax, N.S. |
| CHRC-FM | Quebec, Que. |
| CJBR-FM | Rimouski, Que. |
| CJCA-FM | Edmonton, Alta. |
| CJCB-FM | Sydney, N.S. |
| CJOB-FM | Winnipeg, Man. |
| CJRT-FM | Toronto, Ont. |
| CJSS-FM | Cornwall, Ont. |
| CKCR-FM | Kitchener, Ont. |
| CKDA-FM | Victoria, B.C. |
| CKGB-FM | Timmins, Ont. |
| CKLB-FM | Oshawa, Ont. |
| CKLC-FM | Kingston, Ont. |
| CKLW-FM | Windsor, Ont. |
| CKPC-FM | Brantford, Ont. |
| CKPR-FM | Ft. William, Ont. |
| CKSF-FM | Cornwall, Ont. |
| CKTB-FM | St. Catharines, Ont. |
| CKUA-FM | Edmonton, Alta. |
| CKVL-FM | Verdun, Que. |
| CKWS-FM | Kingston, Ont. |

# U. S. Television Stations

Territories and possessions follow states. Chan., channel number; asterisk (*) indicates educational station.

## ALABAMA

| Location | C.L. | Chan. |
|---|---|---|
| Andalusia | WDIQ | *2 |
| Birmingham | WAPI-TV | 13 |
| | WBIQ | *10 |
| | WBRC-TV | 6 |
| Decatur | WMSL-TV | 23 |
| Dothan | WTVY | 4 |
| Florence | WOWL | 15 |
| Huntsville | WAFG-TV | 31 |
| Mobile | WALA-TV | 10 |
| | WKRG-TV | 5 |
| Montgomery | WCOV-TV | 20 |
| | WSFA-TV | 12 |
| Munford | WCIQ | *7 |
| Selma | WSLA | 8 |

## ALASKA

| Location | C.L. | Chan. |
|---|---|---|
| Anchorage | KENI-TV | 2 |
| | KTVA | 11 |
| Fairbanks | KFAR-TV | 2 |
| | KTVF | 11 |
| Juneau | KINY-TV | 8 |

## ARIZONA

| Location | C.L. | Chan. |
|---|---|---|
| Douglas | KCDA | 3 |
| Phoenix | KOOL-TV | 10 |
| | KAET | *8 |
| | KPHO-TV | 5 |
| | KTVK | 3 |
| | KTAR-TV | 12 |
| Tucson | KGUN-TV | 9 |
| | KOLD-TV | 13 |
| | KVOA-TV | 4 |
| | KUAT | *6 |
| Yuma | KIVA | 11 |

## ARKANSAS

| Location | C.L. | Chan. |
|---|---|---|
| El Dorado | KTVE | 10 |
| Ft. Smith | KFSA-TV | 5 |
| Hot Springs | KFOY-TV | 9 |
| Little Rock | KARK-TV | 4 |
| | KTHV | 11 |
| | KATV | 7 |
| Texarkana | KCMC-TV | 6 |

## CALIFORNIA

| Location | C.L. | Chan. |
|---|---|---|
| Bakersfield | KBAK-TV | 29 |
| | KERO-TV | 10 |
| | KLYD-TV | 17 |
| Chico | KHSL-TV | 12 |
| El Centro | XEM-TV | 3 |
| Eureka | KIEM-TV | 3 |
| | KVIQ-TV | 6 |
| Fresno | KFRE-TV | 30 |
| | KAIL | 53 |
| | KJEO | 47 |
| | KMJ-TV | 24 |
| Hanford | KDAS-TV | 21 |
| Los Angeles | KABC-TV | 7 |
| | KCOP | 13 |
| | KHJ-TV | 9 |
| | KNXT | 2 |
| | KRCA | 4 |
| | KTLA | 5 |
| | KTTV | 11 |
| Oakland | KTVU | 2 |
| Redding | KVIP-TV | 7 |
| Sacramento | KXTV | 10 |
| | KCRA-TV | 3 |
| | KVUE | 40 |
| | KVIE | *6 |
| Salinas | KSBW-TV | 8 |
| San Bernardino | KCHU-TV | 18 |
| San Diego | KFMB-TV | 8 |
| | KOGO-TV | 10 |
| (Tijuana, Mex.) | XETV | 6 |
| San Francisco | KGO-TV | 7 |
| | KPIX | 5 |
| | KQED | *9 |
| | KRON-TV | 4 |
| | KEZE-TV | 20 |
| San Jose | KNTV | 11 |
| San Luis Obispo | KSBY-TV | 6 |
| Santa Barbara | KEY-T | 3 |
| Stockton | KOVR | 13 |
| Vista | KICV-TV | 12 |

## COLORADO

| Location | C.L. | Chan. |
|---|---|---|
| Colorado Springs | KKTV | 11 |
| | KRDO-TV | 13 |
| Denver | KBTV | 9 |
| | KLZ-TV | 7 |
| | KOA-TV | 4 |
| | KRMA-TV | *6 |
| | KTVR | 2 |
| Grand Junction | KREX-TV | 5 |
| Montrose | KREY-TV | 10 |
| Pueblo | KCSJ-TV | 5 |

## CONNECTICUT

| Location | C.L. | Chan. |
|---|---|---|
| Bridgeport | WICC-TV | 43 |
| Hartford | WTIC-TV | 3 |
| | WHCT-TV | 18 |
| New Britain | WHNB-TV | 30 |
| New Haven | WNHC-TV | 8 |
| Waterbury | WATR-TV | 53 |

## DIST. OF COLUMBIA

| Location | C.L. | Chan. |
|---|---|---|
| Washington | WETA-TV | 26 |
| | WMAL-TV | 7 |
| | WRC-TV | 4 |
| | WTOP-TV | 9 |
| | WTTG | 5 |

## FLORIDA

| Location | C.L. | Chan. |
|---|---|---|
| Daytona Beach | WESH-TV | 2 |
| Fort Pierce-Vero Beach | WTVI | 19 |
| Fort Myers | WINK-TV | 11 |
| Gainesville | WUFT | *5 |
| Jacksonville | WFGA-TV | 12 |
| | WJCT | *7 |
| | WJXT | 4 |
| Miami | WCKT | 7 |
| | WLBW-TV | 10 |
| | WTHS-TV | *2 |
| | WTVJ | 4 |
| Orlando | WDBO-TV | 6 |
| | WLOF-TV | 9 |
| Palm Beach | WPTV | 5 |
| Panama City | WJDM-TV | 7 |
| Pensacola | WEAR-TV | 3 |

| Location | C.L. | Chan. |
|---|---|---|
| St. Petersburg | WSUN-TV | 38 |
| Tallahassee | WFSU-TV | *11 |
| Tampa | WFLA-TV | 8 |
| | WEDU | *3 |
| | WTVT | 13 |
| W. Palm Beach | WEAT-TV | 12 |

## GEORGIA

| Location | C.L. | Chan. |
|---|---|---|
| Albany | WALB-TV | 10 |
| Athens | WGTV | *8 |
| Atlanta | WAGA-TV | 5 |
| | WSB-TV | 2 |
| | WETV | *30 |
| | WLW-A | 11 |
| Augusta | WJBF | 6 |
| | WRDW-TV | 12 |
| Columbus | WRBL-TV | 3 |
| | WTVM | 9 |
| Macon | WMAZ-TV | 13 |
| Savannah | WSAV-TV | 3 |
| | WEGA-TV | *9 |
| | WTOC-TV | 11 |
| Thomasville | WCTV | 6 |
| Waycross | WEGS-TV | *8 |

## HAWAII

| Location | C.L. | Chan. |
|---|---|---|
| Hilo | KHBC-TV | 9 |
| | KHJK | 13 |
| Honolulu | KGMB-TV | 9 |
| | KONA | 2 |
| | KHVH-TV | 4 |
| Wailuku | KMAU | 3 |
| | KALA | 7 |
| | KMVI-TV | 12 |

## IDAHO

| Location | C.L. | Chan. |
|---|---|---|
| Boise | KBOI-TV | 2 |
| | KTVB | 7 |
| Idaho Falls | KID-TV | 3 |
| | KIFI-TV | 8 |
| Lewiston | KLEW-TV | 3 |
| Nampa | KCIX-TV | 6 |
| Twin Falls | KLIX-TV | 11 |

## ILLINOIS

| Location | C.L. | Chan. |
|---|---|---|
| Carbondale | WSIU-TV | *8 |
| Champaign | WCIA | 3 |
| | WCHU | 33 |
| Chicago | WBBM-TV | 2 |
| | WBKB | 7 |
| | WGN-TV | 9 |
| | WNBQ | 5 |
| | WTTW | *11 |
| Danville | WICD | 24 |
| Decatur | WTVP | 17 |
| Harrisburg | WSIL-TV | 3 |
| La Salle | WEEQ-TV | 35 |
| Peoria | WEEK-TV | 43 |
| | WMBD | 31 |
| | WTVH | 19 |
| Quincy | WGEM-TV | 10 |
| Rockford | WREX-TV | 13 |
| | WTVO | 39 |
| Rock Island | WHBF-TV | 4 |
| Springfield | WICS | 20 |
| Urbana | WILL-TV | *12 |

## INDIANA

| Location | C.L. | Chan. |
|---|---|---|
| Bloomington | WTTV | 4 |
| Elkhart | WSJV-TV | 28 |
| Evansville | WFIE-TV | 14 |
| | WEHT | 50 |
| | WTVW | 7 |
| Ft. Wayne | WANE-TV | 15 |
| | WKJG-TV | 33 |
| | WPTA | 21 |
| Indianapolis | WFBM-TV | 6 |
| | WLWI | 13 |
| | WISH-TV | 8 |
| Lafayette | WFAM-TV | 18 |
| Muncie | WLBC-TV | 49 |
| South Bend | WNDU-TV | 16 |
| | WSBT-TV | 22 |
| Terre Haute | WTHI-TV | 10 |

## IOWA

| Location | C.L. | Chan. |
|---|---|---|
| Ames | WOI-TV | 5 |
| Cedar Rapids | KCRG-TV | 9 |
| | WMT-TV | 2 |
| Davenport | WOC-TV | 6 |
| Des Moines | KRNT-TV | 8 |
| | KDPS-TV | *11 |
| | WHO-TV | 13 |
| Fort Dodge | KQTV | 21 |
| Mason City | KGLO-TV | 3 |
| Ottumwa | KTVO | 3 |
| Sioux City | KTIV | 4 |
| | KVTV | 9 |
| Waterloo | KWWL-TV | 7 |

## KANSAS

| Location | C.L. | Chan. |
|---|---|---|
| Ensign | KTVC | 6 |
| Garden City | KGLD | 11 |
| Goodland | KWHT-TV | 10 |
| Great Bend | KCKT | 2 |
| Hays | KAYS-TV | 7 |
| Hutchinson | KTVH | 12 |
| Pittsburg | KOAM-TV | 7 |
| Topeka | WIBW-TV | 13 |
| Wichita | KAKE-TV | 10 |
| | KARD-TV | 3 |

## KENTUCKY

| Location | C.L. | Chan. |
|---|---|---|
| Lexington | WLEX-TV | 18 |
| | WKYT | 27 |
| Louisville | WAVE-TV | 3 |
| | WFPK-TV | *15 |
| | WHAS-TV | 11 |
| | WQXL-TV | 41 |
| Paducah | WPSD-TV | 6 |

## LOUISIANA

| Location | C.L. | Chan. |
|---|---|---|
| Alexandria | KALB-TV | 5 |
| Baton Rouge | WAFB-TV | 9 |
| | WBRZ | 2 |
| Lafayette | KLFY-TV | 10 |
| Lake Charles | KPLC-TV | 7 |
| | KTAG-TV | 25 |
| Monroe | KNOE-TV | 8 |
| | KLSE | *13 |
| New Orleans | WDSU-TV | 6 |
| | WVUE | 13 |
| | WWL-TV | 4 |
| | WYES | *8 |
| Shreveport | KSLA-TV | 12 |
| | KTBS-TV | 3 |

## MAINE

| Location | C.L. | Chan. |
|---|---|---|
| Augusta | WCBB | 10 |
| Bangor | WABI-TV | 5 |
| | WLBZ-TV | 2 |
| Poland Spring | WMTW-TV | 8 |
| Portland | WCSH-TV | 6 |
| | WGAN-TV | 13 |
| Presque Isle | WAGM-TV | 8 |

## MARYLAND

| Location | C.L. | Chan. |
|---|---|---|
| Baltimore | WJZ-TV | 13 |
| | WBAL-TV | 11 |
| | WMAR-TV | 2 |
| Salisbury | WBOC-TV | 16 |

## MASSACHUSETTS

| Location | C.L. | Chan. |
|---|---|---|
| Adams | WCDC | 19 |
| Boston | WBZ-TV | 4 |
| | WGBH-TV | *2 |
| | WHDH-TV | 5 |
| | WNAC-TV | 7 |
| Greenfield | WRLP | 32 |
| Springfield | WHYN-TV | 40 |
| | WWLP | 22 |
| Worcester | WWOR-TV | 14 |

## MICHIGAN

| Location | C.L. | Chan. |
|---|---|---|
| Bay City | WNEM-TV | 5 |
| Cadillac | WWTV | 13 |
| Cheboygan | WTOM-TV | 4 |
| Detroit | WJBK-TV | 2 |
| | WTVS | *56 |
| | WWJ-TV | 4 |
| | WXYZ-TV | 7 |
| (Windsor, Ont.) | CKLW-TV | 9 |
| Flint | WJRT | 12 |
| Grand Rapids | WOOD-TV | 8 |
| Kalamazoo | WKZO-TV | 3 |
| Lansing | WJIM-TV | 6 |
| Marquette | WLUC-TV | 6 |
| Onondaga | WILX-TV/WMSB | 10 |
| Saginaw | WKNX-TV | 57 |
| Traverse City | WPBN-TV | 7 |

## MINNESOTA

| Location | C.L. | Chan. |
|---|---|---|
| Alexandria | KCMT | 7 |
| Austin | KMMT | 6 |
| Duluth | KDAL-TV | 3 |
| | WDSM-TV | 6 |
| Mankato | KEYC-TV | 12 |
| Minneapolis | KMSP | 9 |
| | WCCO-TV | 4 |
| | WTCN-TV | 11 |
| Rochester | KROC-TV | 10 |
| St. Paul | KSTP-TV | 5 |
| | KTCA-TV | *2 |

## MISSISSIPPI

| Location | C.L. | Chan. |
|---|---|---|
| Columbus | WCBI-TV | 4 |
| Greenwood | WABG-TV | 6 |
| Jackson | WJTV | 12 |
| | WLBT | 3 |
| Laurel | WDAM-TV | 7 |
| Meridian | WTOK-TV | 11 |
| | WCOC-TV | 30 |
| Tupelo | WTWV | 9 |

## MISSOURI

| Location | C.L. | Chan. |
|---|---|---|
| Cape Girardeau | KFVS-TV | 12 |
| Columbia | KOMU-TV | 8 |
| Hannibal | KHQA-TV | 7 |
| Jefferson City | KRCG-TV | 13 |
| Joplin | KODE-TV | 12 |
| Kansas City | KCMO-TV | 5 |
| | KCSD-TV | *19 |
| | KMBC-TV | 9 |
| | WDAF-TV | 4 |
| Kirksville | KTVO | 3 |
| Poplar Bluff, Mo. | KPOB-TV | 15 |
| St. Joseph | KFEQ-TV | 2 |
| St. Louis | KETC | *9 |
| | KMOX-TV | 4 |
| | KSD-TV | 5 |
| | KTVI | 2 |
| | KPLR-TV | 11 |
| Sedalia | KMOS-TV | 6 |
| Springfield | KTTS-TV | 10 |
| | KYTV | 3 |

## MONTANA

| Location | C.L. | Chan. |
|---|---|---|
| Billings | KOOK-TV | 2 |
| | KGHL-TV | 8 |
| Butte | KXLF-TV | 4 |
| Glendive | KXGN-TV | 5 |
| Great Falls | KFBB-TV | 5 |
| | KRTV | 3 |
| Helena | KBLL-TV | 12 |
| Kalispell | KULR | 9 |
| Missoula | KMSO-TV | 13 |

## NEBRASKA

| Location | C.L. | Chan. |
|---|---|---|
| Grand Island | KGIN-TV | 11 |
| Hastings | KHAS-TV | 5 |
| Hay Springs | KDUH-TV | 4 |
| Hayes Center | KHPL-TV | 6 |
| Kearney | KHOL-TV | 13 |
| Lincoln | KOLN-TV | 10 |
| | KUON-TV | *12 |
| McCook | KOMC | 8 |
| North Platte | KNOP | 2 |
| Omaha | KMTV | 3 |
| | KETV | 7 |
| | WOW-TV | 6 |
| Scottsbluff | KSTF | 10 |

## NEVADA

| Location | C.L. | Chan. |
|---|---|---|
| Henderson | KLRJ-TV | 2 |
| Las Vegas | KLAS-TV | 8 |
| | KSHO-TV | 13 |
| Reno | KOLO-TV | 8 |

## NEW HAMPSHIRE

| Location | C.L. | Chan. |
|---|---|---|
| Durham | WENH-TV | *11 |
| Manchester | WMUR-TV | 9 |

## NEW JERSEY

| Location | C.L. | Chan. |
|---|---|---|
| Newark | WNDT-TV | 13 |

## NEW MEXICO

| Location | C.L. | Chan. |
|---|---|---|
| Albuquerque | KGGM-TV | 13 |
| | KNME-TV | *5 |
| | KOAT-TV | 7 |
| | KOB-TV | 4 |
| Carlsbad | KAVE-TV | 6 |
| Clovis | KVER-TV | 12 |
| Roswell | KSWS-TV | 8 |

## NEW YORK

| Location | C.L. | Chan. |
|---|---|---|
| Albany | WTEN | 10 |
| | WAST | 13 |
| | WTRI | 35 |
| | WCDA | 41 |
| Binghamton | WINR-TV | 40 |
| | WNBF-TV | 12 |
| Buffalo | WBEN-TV | 4 |
| | WNED-TV | *17 |
| | WGR-TV | 2 |
| | WKBW-TV | 7 |
| Carthage | WCNY-TV | 7 |
| Elmira | WSYE-TV | 18 |
| New York | WABC-TV | 7 |
| | WUHF-TV | 31 |
| | WNEW-TV | 5 |
| | WCBS-TV | 2 |
| | WOR-TV | 9 |
| | WPIX | 11 |
| | WNBC-TV | 4 |
| Plattsburg | WPTZ-TV | 5 |
| Rochester | WHEC-TV | 10 |
| | WROC-TV | 5 |
| | WVET-TV | 10 |
| Schenectady | WRGB | 6 |
| Syracuse | WHEN-TV | 8 |
| | WSYR-TV | 3 |
| Utica | WKTV | 2 |

## NORTH CAROLINA

| Location | C.L. | Chan. |
|---|---|---|
| Asheville | WISE-TV | 62 |
| | WLOS-TV | 13 |
| Chapel Hill | WUNC-TV | *4 |
| Charlotte | WBTV | 3 |
| | WSOC-TV | 9 |
| Durham | WTVD | 11 |
| Greensboro | WFMY-TV | 2 |
| Greenville | WNCT | 9 |
| Raleigh | WRAL-TV | 5 |
| Washington | WITN | 7 |
| Wilmington | WECT | 6 |
| Winston-Salem | WSJS-TV | 12 |

## NORTH DAKOTA

| Location | C.L. | Chan. |
|---|---|---|
| Bismarck | KXMB-TV | 12 |
| | KFYR-TV | 5 |
| Dickinson | KDIX-TV | 2 |
| Fargo | WDAY-TV | 6 |
| | KXGO-TV | 11 |
| Grand Forks | KNOX-TV | 10 |
| Minot | KXMC-TV | 13 |
| | KMOT | 10 |
| Pembina, N.D. | KCND-TV | 12 |
| Valley City | KXJB-TV | 4 |
| Williston | KUMV-TV | 8 |

## OHIO

| Location | C.L. | Chan. |
|---|---|---|
| Akron | WAKR-TV | 49 |
| Cincinnati | WCET | *48 |
| | WCPO-TV | 9 |
| | WKRC-TV | 12 |
| | WLW-T | 5 |
| | WCIN-TV | 54 |
| Cleveland | KYW-TV | 3 |
| | WEWS | 5 |
| | WJW-TV | 8 |
| Columbus | WBNS-TV | 10 |
| | WLW-C | 4 |
| | WOSU-TV | *34 |
| | WTVN-TV | 6 |
| Dayton | WHIO-TV | 7 |
| | WLW-D | 2 |
| Lima | WIMA-TV | 35 |
| Oxford | WMUB-TV | 14 |
| Steubenville | WSTV-TV | 9 |
| Toledo | WSPD-TV | 13 |
| | WGTE-TV | *30 |
| | WTOL-TV | 11 |
| Youngstown | WFMJ-TV | 21 |
| | WKBN-TV | 27 |
| | WKST-TV | 33 |
| Zanesville | WHIZ-TV | 18 |

## OKLAHOMA

| Location | C.L. | Chan. |
|---|---|---|
| Ada | KTEN | 10 |
| Ardmore | KXII | 12 |
| Enid | KOCO-TV | 5 |
| Lawton | KSWO-TV | 7 |
| Oklahoma City | KETA | *13 |
| | KOKH-TV | 25 |
| | KWTV | 9 |
| | WKY-TV | 4 |
| Tulsa | KOTV | 6 |
| | KOED-TV | *11 |
| | KTUL-TV | 8 |
| | KVOO-TV | 2 |

## OREGON

| Location | C.L. | Chan. |
|---|---|---|
| Coos Bay | KCBY-TV | 11 |
| Corvallis | KOAC-TV | *7 |
| Eugene | KVAL-TV | 13 |
| | KEZI-TV | 9 |
| Klamath | KOTI | 2 |
| Medford | KBES-TV | 5 |
| | KMED-TV | 10 |
| Portland | KGW-TV | 8 |
| | KOAP-TV | *10 |
| | KATU-TV | 2 |
| | KOIN-TV | 6 |
| | KPTV | 12 |
| Roseburg | KPIC | 4 |

## PENNSYLVANIA

| Location | C.L. | Chan. |
|---|---|---|
| Altoona | WFBG-TV | 10 |
| Erie | WICU | 12 |
| | WSEE-TV | 35 |
| Harrisburg | WHP-TV | 21 |
| | WTPA | 27 |
| Johnstown | WARD-TV | 56 |
| | WJAC-TV | 6 |
| Lancaster | WGAL-TV | 8 |
| Lebanon | WLVH-TV | 15 |
| Lockhaven | WBPZ-TV | 32 |
| New Castle | WKST-TV | 33 |
| Philadelphia | WCAU-TV | 10 |
| | WFIL-TV | 6 |
| | WHYY-TV | *35 |
| | WPCA-TV | 17 |
| | WRCV-TV | 3 |
| Pittsburgh | KDKA-TV | 2 |
| | WIIC | 11 |
| | WQED | *13 |
| | WTAE | 4 |
| Scranton | WNEP-TV | 16 |
| | WDAU-TV | 22 |
| Wilkes-Barre | WBRE-TV | 28 |
| York | WSBA-TV | 43 |

## RHODE ISLAND

| Location | C.L. | Chan. |
|---|---|---|
| Providence | WJAR-TV | 10 |
| | WPRO-TV | 12 |

## SOUTH CAROLINA

| Location | C.L. | Chan. |
|---|---|---|
| Anderson | WAIM-TV | 40 |
| Charleston | WCSC-TV | 5 |
| | WUSN-TV | 2 |
| Clemson | WSBF-FM | *88.1 |
| Columbia | WIS-TV | 10 |
| | WCCA-TV | 25 |
| | WNOK-TV | 67 |
| Florence | WBTW | 8 |
| Greenville | WFBC-TV | 4 |
| Spartanburg | WSPA-TV | 7 |

## SOUTH DAKOTA

| Location | C.L. | Chan. |
|---|---|---|
| Aberdeen | KXAB-TV | 9 |
| Deadwood | KDSJ-TV | 5 |
| Florence | KDLO-TV | 3 |
| Mitchell | KORN-TV | 5 |
| Rapid City | KOTA-TV | 3 |
| | KRSD-TV | 7 |
| Reliance | KPLO-TV | 6 |
| Sioux Falls | KELO-TV | 11 |
| | KSOO-TV | 13 |
| Vermilion | KUSD-TV | *2 |

## TENNESSEE

| Location | C.L. | Chan. |
|---|---|---|
| Chattanooga | WDEF-TV | 12 |
| | WRGP-TV | 3 |
| | WTVC | 9 |
| Jackson | WDXI-TV | 7 |
| Johnson City | WJHL-TV | 11 |
| Knoxville | WATE-TV | 6 |
| | WBIR-TV | 10 |

| Location | C.L. | Chan. |
|---|---|---|
| | WTVK | 26 |
| Memphis | WHBQ-TV | 13 |
| | WKNO | *10 |
| | WMCT | 5 |
| | WREC-TV | 3 |
| Nashville | WLAC-TV | 5 |
| | WSIX-TV | 8 |
| | WSM-TV | 4 |

## TEXAS

| Location | C.L. | Chan. |
|---|---|---|
| Abilene | KRBC-TV | 9 |
| Alpine | KULF-TV | 12 |
| Amarillo | KFDA-TV | 10 |
| | KGNC-TV | 4 |
| | KVII | 7 |
| Austin | KTBC-TV | 7 |
| Beaumont | KFDM-TV | 6 |
| Big Spring | KEDY-TV | 4 |
| Bryan | KBTX-TV | 3 |
| Corpus Christi | KRIS-TV | 6 |
| | KZTV | 10 |
| Dallas | KRLD-TV | 4 |
| | KERA-TV | *13 |
| | WFAA-TV | 8 |
| El Paso | KELP-TV | 13 |
| | KROD-TV | 4 |
| | KTSM-TV | 9 |
| (Ciudad Juarez, Mex.) | XEJ-TV | 5 |
| Ft. Worth | KTVT | 11 |
| | WBAP-TV | 5 |
| Harlingen | KGBT-TV | 4 |
| Houston | KPRC-TV | 2 |
| | KHOU-TV | 11 |
| | KTRK-TV | 13 |
| | KUHT | *8 |
| Laredo | KGNS-TV | 8 |
| Lubbock | KCBD-TV | 11 |
| | KDUB-TV | 13 |
| Lufkin | KTRE-TV | 9 |
| Midland | KMID-TV | 2 |
| | KDCD-TV | 18 |
| Monahans | KVKM-TV | 9 |
| Odessa | KOSA-TV | 7 |
| Port Arthur-Beaumont | KPAC-TV | 4 |
| Richardson | KRET-TV | *23 |
| San Angelo | KCTV | 8 |
| | KACB-TV | 3 |
| San Antonio | KUAL-TV | 41 |
| | KENS-TV | 5 |
| | KLRN | *9 |
| | KONO-TV | 12 |
| | WOAI-TV | 4 |
| Sweetwater | KPAR-TV | 12 |
| Temple | KCEN-TV | 6 |
| Texarkana | KTAL-TV | 6 |
| Tyler | KLTV | 7 |
| Waco | KWTX-TV | 10 |
| Weslaco | KRGV-TV | 5 |
| Wichita Falls | KFDX-TV | 3 |
| | KSYD-TV | 6 |

## UTAH

| Location | C.L. | Chan. |
|---|---|---|
| Ogden | KVOG-TV | 9 |
| | KWCS-TV | *18 |
| Provo | KLOR-TV | 11 |
| Salt Lake City | KSL-TV | 5 |
| | KCPX-TV | 4 |
| | KUED | *7 |
| | KUTV | 2 |

## VERMONT

| Location | C.L. | Chan. |
|---|---|---|
| Burlington | WCAX-TV | 3 |

## VIRGINIA

| Location | C.L. | Chan. |
|---|---|---|
| Bristol | WCYB-TV | 5 |
| Hampton | WVEC-TV | 13 |
| Harrisonburg | WSVA-TV | 3 |
| Lynchburg | WLVA-TV | 13 |
| Norfolk | WHRO-TV | 15 |
| | WTAR-TV | 3 |
| Petersburg | WXEX-TV | 8 |
| Portsmouth | WAVY-TV | 10 |
| Richmond | WRVA-TV | 12 |
| | WTVR | 6 |
| Roanoke | WDBJ-TV | 7 |
| | WSLS-TV | 10 |

## WASHINGTON

| Location | C.L. | Chan. |
|---|---|---|
| Bellingham | KVOS-TV | 12 |
| Pasco | KEPR-TV | 19 |
| Richland | KNDD-TV | 25 |
| Seattle | KCTS-TV | *9 |
| | KING-TV | 5 |
| | KIRO-TV | 7 |
| | KOMO-TV | 4 |
| Spokane | KHQ-TV | 6 |
| | KREM-TV | 2 |
| | KXLY-TV | 4 |
| Tacoma | KTNT-TV | 11 |
| | KPEC-TV | *56 |
| | KTPS | *62 |
| | KTVW | 13 |
| Yakima | KIMA-TV | 29 |
| | KNDO-TV | 23 |

## WEST VIRGINIA

| Location | C.L. | Chan. |
|---|---|---|
| Bluefield | WHIS-TV | 6 |
| Charleston | WCHS-TV | 8 |
| Clarksburg | WBOY-TV | 12 |
| Fairmont | WJPB-TV | 5 |
| Huntington | WHTN-TV | 13 |
| | WSAZ-TV | 3 |
| Oak Hill | WOAY-TV | 4 |
| Parkersburg | WTAP-TV | 15 |
| Wheeling | WTRF-TV | 7 |

## WISCONSIN

| Location | C.L. | Chan. |
|---|---|---|
| Eau Claire | WEAU-TV | 13 |
| Green Bay | WBAY-TV | 2 |
| | WFRV | 5 |
| | WLUK-TV | 11 |
| La Crosse | WKBT | 8 |
| Madison | WHA-TV | *21 |
| | WISC-TV | 3 |
| | WKOW-TV | 27 |
| | WMTV | 33 |
| Marinette | WMBV-TV | 11 |
| Milwaukee | WISN-TV | 12 |
| | WITI-TV | 6 |
| | WMVS-TV | *10 |
| | WTMJ-TV | 4 |
| | WXIX | 18 |
| Wausau | WSAU-TV | 7 |

## WYOMING

| Location | C.L. | Chan. |
|---|---|---|
| Casper | KTWO-TV | 2 |
| Cheyenne | KFBC-TV | 5 |
| Riverton | KWRB-TV | 10 |

## PUERTO RICO

| Location | C.L. | Chan. |
|---|---|---|
| Aguadilla | WOLE-TV | 12 |
| Caguas | WKBM-TV | 11 |
| Mayaguez | WORA-TV | 5 |
| | WIPM-TV | *3 |
| Ponce | WRIK-TV | 7 |
| | WSUR-TV | 9 |
| San Juan | WAPA-TV | 4 |
| | WIPR-TV | 6 |
| | WKAQ-TV | 2 |

# Canadian Television Stations

## ALBERTA

| Location | C.L. | Chan. |
|---|---|---|
| Burmis | CJLH-TV-3 | 3 |
| Calgary | CHCT-TV | 2 |
| | CFCN-TV | 8 |
| Drumheller | CFCN-TV-1 | 8 |
| | CBXT-TV | 5 |
| Edmonton | CFRN-TV | 3 |
| Lethbridge | CJLH-TV | 7 |
| Lloydminster | CHSA-TV | 2 |
| Medicine Hat | CHAT-TV | 6 |
| Pivot | CHAT-TV | 4 |
| Red Deer | CHCA-TV | 6 |
| | CHCA-TV-2 | 10 |

## BRITISH COLUMBIA

| Location | C.L. | Chan. |
|---|---|---|
| Ashcroft | CFCR-TV-2 | 10 |
| Burnaby | CHAN-TV | 8 |
| Crescent Valley | CHMS-TV | 5 |
| Dawson Creek | CJDC-TV | 5 |
| Enderby | CHBC-TV-8 | 5 |
| Kamloops | CFCR-TV | 4 |
| Kelowna | CHBC-TV | 2 |
| | CHGP-TV-1 | 72 |
| | CABC-TV | 4 |
| Keremeos | CHBC-TV-9 | 5 |
| Lumby | CHBC-TV-4 | 5 |
| Nelson | CBUAT-TV-7 | 9 |
| Oliver | CHBC-TV-3 | 8 |
| Peachland | CHBC-TV-10 | 5 |
| Penticton | CHBC-TV-2 | 13 |
| Prince George | CKPG-TV | 3 |
| Saddle Mountain | CHHC-TV-1 | 4 |
| Salmon Arm | CHBC-TV-6 | 5 |
| Trail | CBUAT | 11 |
| Vancouver | CBUT | 2 |
| Vernon | CHBC-TV-3 | 7 |
| Victoria | CHEK-TV | 6 |

## LABRADOR

| Location | C.L. | Chan. |
|---|---|---|
| Goose Bay | CFLA-TV | 8 |

## MANITOBA

| Location | C.L. | Chan. |
|---|---|---|
| Baldy Mountain | CKOS-TV-1 | 8 |
| Brandon | CKX-TV | 5 |
| Winnipeg | CBWT | 3 |
| | CBWFT | 6 |
| | CJAY-TV | 7 |

## NEW BRUNSWICK

| Location | C.L. | Chan. |
|---|---|---|
| Campbellton | CRCD-TV | 7 |
| Moncton | CKAM-TV | 2 |
| | CBAFT | 11 |
| Saint John | CHSJ-TV | 4 |
| Upsalquitch Lake | CKAM | 12 |

## NEWFOUNDLAND

| Location | C.L. | Chan. |
|---|---|---|
| Argentia | CJOX-TV | 10 |
| Corner Brook | CBYT | 5 |
| | CHEK-TV | 6 |
| Grand Falls | CJCN-TV | 4 |
| St. John's | CJON-TV | 6 |
| Stephenville | CFSN-TV | 8 |

## NOVA SCOTIA

| Location | C.L. | Chan. |
|---|---|---|
| Antigonish | CFXU-TV | 9 |
| Halifax | CBHT | 3 |
| | CJCH-TV | 5 |
| Inverness | CJCB-TV-1 | 6 |
| Liverpool | CBHT-1 | 12 |
| New Glasgow | CFCY-TV-1 | 7 |
| Shelburne | CBHT-2 | 8 |
| Sydney | CJCB-TV | 4 |
| Yarmouth | CBHT-3 | 11 |

## ONTARIO

| Location | C.L. | Chan. |
|---|---|---|
| Barrie | CKVR-TV | 11 |
| Cornwall | CJSS-TV | 8 |
| Elk Lake | CFCL-TV-2 | 2 |
| Elliot Lake | CKSO-TV-1 | 3 |
| Hamilton | CHCH-TV | 11 |
| Kapuskasing | CFCL-TV-1 | 3 |
| Kenora | CBWAT | 8 |
| Kingston | CKWS-TV | 11 |
| Kitchener | CKCO-TV | 13 |
| London | CFPL-TV | 10 |
| North Bay | CKGN-TV | 10 |
| Parry Sound | CKVR-TV | 11 |
| Pembroke | CHOV-TV | 5 |
| Peterborough | CHEX-TV | 12 |
| Ottawa | CBOFT | 9 |
| | CBOT | 4 |
| | CJOH-TV | 13 |
| Port Arthur | CKPR-TV-1 | 2 |
| Sault Ste. Marie | CJIC-TV | 2 |
| Sioux Lookout | CHSL-TV | 9 |
| Sturgeon Falls | CBFST | 7 |
| Sudbury | CKSO-TV | 5 |
| Timmins | CFCL-TV | 2 |
| Toronto | CBLT | 6 |
| | CFTO-TV | 9 |
| Windsor | CKLW-TV | 9 |
| Wingham | CKNX-TV | 8 |

## PRINCE EDWARD ISLAND

| Location | C.L. | Chan. |
|---|---|---|
| Charlottetown | CFCY-TV | 13 |

## QUEBEC

| Location | C.L. | Chan. |
|---|---|---|
| Carleton | CHAU-TV | 5 |
| | CJAO-TV-1 | 80 |
| | CHSM-TV | 7 |
| Clermont | CFCV-TV-1 | 75 |
| Estcourt | CJES-TV-1 | 70 |
| Jonquiere | CKRS-TV | 12 |
| Matane | CKBL-TV | 9 |
| Montreal | CBFT | 2 |
| | CFCF-TV | 12 |
| | CFTM-TV | 10 |
| | CBMT | 6 |
| New Carlisle | CHAU-TV | 5 |
| Quebec | CFCM-TV | 4 |
| | CKMI-TV | 5 |
| Rimouski | CJBR-TV | 3 |
| Riviere du-Loup | CKRT-TV | 7 |
| Rouyn | CKRN-TV | 4 |
| Sherbrooke | CHLT-TV | 7 |
| Three Rivers | CKTM-TV | 13 |

## SASKATCHEWAN

| Location | C.L. | Chan. |
|---|---|---|
| Carlyle Lake | CKDS-TV-2 | 7 |
| East End | CJFB-TV | 2 |
| Moose Jaw | CHAB-TV | 4 |
| Nipawin | CKBI-TV-4 | 2 |
| Prince Albert | CKBI-TV-1 | 2 |
| Regina | CKCK-TV | 2 |
| Saskatoon | CFQC-TV | 8 |
| Swift Current | CFJB-TV | 5 |
| Val Marie | CJFB | 2 |
| Wanganui | CKBI-TV-2 | 7 |
| Yorkton | CKOS-TV | 7 |

# World-Wide Short-Wave Stations

Most international broadcasting is done within frequency limits agreed upon at international conventions. These frequency ranges are listed here, at the right, expressed both in frequency and by meter bands (wave-length).

Reception in the various bands varies according to the time of day and season of the year. Reception in the 60, 49 and 41 meter bands is best at night during the winter months. Reception in the 31 and 25 M. bands is best at night, but all year. Reception in the 19, 16, 13 and 11 M. bands is best during the day, also at night during the summer in the 16 and 19 M. bands. This listing includes only SWBC often heard in the U.S. and Canada, exclusive of those in the continental U.S.

Abbr.: AIR—All India Radio; RAI—Radiotelevisione Italiana; RTF—Radiodiffusion Television Francaise; VOA—Voice of America; RFE—Radio Free Europe. • denotes stations beaming evening (U.S. time) broadcasts to the U.S., † morning or afternoon broadcasts, V—varies.

**METER BANDS**

*4750 to 5060 kc/s (60 meter band)*
*5950 to 6200 kc/s (49 meter band)*
*7100 to 7300 kc/s (41 meter band)*
*9500 to 9775 kc/s (31 meter band)*
*11700 to 11975 kc/s (25 meter band)*
*15100 to 15450 kc/s (19 meter band)*
*17700 to 17900 kc/s (16 meter band)*
*21450 to 21750 kc/s (13 meter band)*
*25600 to 26100 kc/s (11 meter band.*

| Kcs. | Call and Location |
|---|---|
| 4630 | HCGBI, Quito, Ecu. |
| 4725 | Rangoon, Burma |
| 4765 | HJEF, Cali, Col. |
| 4770 | ELWA, Monrovia, Lib. |
| 4770 | YVMW, Punto Fiji, Ven. |
| 4780 | YVLA, Valencia, Ven. |
| 4790 | YVQN, Puerto La Cruz, Ven. |
| 4805 | ZYS8, Manaus, Braz. |
| 4810 | YVMG, Maracaibo, Ven. |
| 4830 | YVOA, San Cristobal, Ven. |
| 4835 | HJKE, Bogota, Col. |
| 4840v | Lourenco Marques, Moz. |
| 4840 | YVOI, Valera, Ven. |
| 4845 | HJGF, Bucaramanga, Col. |
| 4850 | YVMS, Barquisimeto, Ven. |
| 4870 | Cotonou, Dahomey Rep. |
| 4880 | YVKF, Caracas, Ven. |
| 4895 | Daker, Senegal |
| 4895 | ZYR22, Manaus, Braz. |
| 4900 | YUKE, Caracas, Ven. |
| 4900v | HJAC, Barranquilla, Col. |
| 4905 | HRQN3, Puerto Cortes, Hon. |
| 4910 | HCIMI, Quito, Ecua. |
| 4910 | Conakry, Guinea |
| 4915 | Accra, Ghana |
| 4920 | VLM4, Brisbane, Aus. |
| 4920 | YVKR, Caracas, Ven. |
| 4935 | HJLF, Ibague, Col. |
| 4940 | HCXZI, Guayaquil, Ecu. |

| Kcs. | Call and Location |
|---|---|
| 4940 | Abidjan, Ivory Coast |
| 4940 | YVMO, Barquisimeto, Ven. |
| 4945 | HJCW, Bogota, Col. |
| 4945 | Paradys, So. Afr. |
| 4950 | Dakar, Senegal |
| 4950 | YVMM, Coro, Ven. |
| 4960 | YVQA, Cumana, Ven. |
| 4970 | YVLK, Caracas, Ven. |
| 4972 | Yaounde, Cameroon |
| 4990 | Lagos, Nigeria |
| 4990 | YVMQ, Barquisimeto, Ven. |
| 4995 | CR6RZ, Luanda, Angola |
| 5010 | HCRCX, Quito, Ecu. |
| 5010 | St. Georges, Windward Isl. |
| 5020 | HJFW, Manizales, Col. |
| 5020 | Niamey, Niger Rep. |
| 5030 | YVKM, Caracas, Ven. |
| 5040 | YVMA, Maracaibo, Ven. |
| 5050 | YVKD, Caracas, Ven. |
| 5075 | HJGC Bogota, Col. |
| 5875 | Tegucigalpa, Hond. |
| 5952 | TGNA, Guatemala, Guat. |
| 5954 | TIQ, Puerto Limon, C. R. |
| 5960 | HJCF, Bogota, Col. |
| 5980v | TGAR, Guatemala, Guat. |
| 5980 | 4VB7, Port au Prince, Haiti |
| 5985 | Hilversum, Neth. |
| 5990 | TGJA, Guatemala |
| 5990 | Habana, Cuba |
| 5995 | Fort-de-France, Mart. |
| 6000 | Radio Americas |
| 6005 | RIAS, Berlin, Ger. |
| 6010 | XEOL, Mexico City, Mexico |
| 6015 | PRA8, Recife, Braz. |
| 6015v | Habana, Cuba |
| 6020 | Hilversum, Neth. |
| 6020 | Khabarovsk, USSR |
| 6025 | Kuala Lumpur, Malaya |
| 6025 | Lisbon, Port. |
| 6030 | Baghdad, Iraq |
| 6035 | Rangoon, Burma |
| 6035 | HRTL, Tegucigalpa, Hond. |
| 6037 | TIFC, San Jose, C. R. |
| 6040 | HJLB, Ibague, Col. |
| 6040 | VOA, Munich, Germany |
| 6045 | HOU31, David, Pan. |
| 6050 | HCJB, Quito, Ecua. |
| 6050 | BBC, London, Eng. |
| 6055 | HJEX, Cali, Col. |
| 6055 | JOZ2, Tokyo, Japan |
| 6060 | RAI, Caltanissetta, It. |
| 6060 | YDF, Djakarta, Indonesia |
| 6065 | XEXG, Leon, Mex. |
| 6065 | Horby, Sweden |
| 6070 | Sofia, Bulgaria |
| 6070 | BBC, London, Eng. |
| 6075 | Osterloog, Ger. |
| 6080 | ZL7, Wellington, N.Z. |
| 6080 | Trans World Radio, Monaco |
| 6082 | OAX4Z, Lima, Peru |
| 6085 | Munich, Ger. |
| 6090 | VLI6, Sydney, Aus. |
| 6090 | Luxembourg, Lux. |
| 6090 | XECMT, C. El Mante, Mex. |
| 6090 | HI2U, Santo Domingo, D.R. |
| 6095 | ZYB7, Sao Paulo, Braz. |
| 6100 | Belgrade, Yugo. |
| 6105 | XEQM, Merida, Mex. |
| 6105 | Cologne, Ger. |
| 6110 | BBC, London, Eng. |
| 6115 | ZYC7, Rio de Jan., Braz. |
| 6120 | LRX1, Buenos Aires |
| 6120 | 4VEH, Cap Haitien, Haiti |
| 6120 | BBC, Limassol, Cyprus |
| 6130 | Port Moresby, New Guinea |
| 6135 | HRMF, La Ceiba, Hond. |
| 6135 | Papeete, Tahiti |
| 6140 | VLW6, Perth, Aus. |
| 6145 | RTF, Allouis, France |
| 6145v | PAL9, Rio de Jan., Braz. |
| 6150 | BBC, London, Eng. |
| 6155 | Wien, Austria |
| 6155 | FEN, Tokyo, Japan |
| 6160 | HJKJ, Bogota, Col. |
| 6160 | Algiers, Algeria |
| 6160 | Saigon, S. Vietnam |
| 6165 | HER3, Bern, Switz. ● |
| 6170 | BBC, Limassol, Cyprus |
| 6170 | Singapore, Sing. |
| 6170 | VOA, Tangiers, Morocco |
| 6175 | RTF, Allouis, France |
| 6175 | Cayenne, Fr. Guiana |
| 6185 | Lisbon, Port. |
| 6185 | HJCT, Bogota, Col. |
| 6195 | HJEZ, Cali, Col. |
| 6195 | BBC, London, Eng. |
| 6195 | Pyongyang, N. Korea |
| 6195 | Andorra, Andorra |
| 6200 | 4VHW, Port-au-Prince, Haiti |
| 6305 | Andorra, Andorra |
| 7095v | Tehran, Iran |
| 7105 | Madrid, Spain |
| 7110 | VOA, Colombo, Ceylon |
| 7110 | BBC, London, England |
| 7115 | Rabat, Morocco |
| 7120 | BBC, London, England |
| 7125 | Warsaw, Poland |
| 7135 | Taipeh, Taiwan |
| 7145 | Bamako, Mali |
| 7150 | Moscow, U.S.S.R. |
| 7155 | VOA, Tangiers, Mor. |
| 7160 | RTF, Paris, France |
| 7165 | RFE, Germ. |
| 7170 | Algiers, Alg. |
| 7180 | Baghdad, Iraq |
| 7180 | Moscow, U.S.S.R. |
| 7185 | BBC, London, Eng. |
| 7185 | Paradys, So. Africa |
| 7193 | Bucharest, Roumania |
| 7200 | R. Malaya, Sing. |
| 7205 | VOA, Salonika, Gr. |
| 7210 | Dakar, Mali Fed. |
| 7215 | Trans World Radio, Monaco |
| 7220 | VLD7, Melbourne, Aus. |
| 7220 | Budapest, Hung. |
| 7230 | BBC, London, Eng. |
| 7240 | RTF, Paris, France |
| 7250 | BBC, London, Eng. |
| 7255 | Sofia, Bulg. |
| 7265 | Saigon, Vietnam |
| 7270 | Motola, Sweden |
| 7275 | RAI, Rome, It. |
| 7285 | Ankara, Turk. |
| 7290 | Singapore |
| 7290 | Moscow, U.S.S.R. |
| 7290 | RAI, Rome, It. |
| 7295 | Makassar, Celebes |
| 7295 | RFE, Ger. |
| 7340 | Moscow, U.S.S.R. |
| 7398v | Damascus, U.A.R. |
| 7480 | Peking, China |
| 7650 | YNMS, Leon, Nic. |
| 8016 | Beirut, Lebanon |
| 9009 | Tel Aviv, Israel |
| 9360 | CDBC, Habana, Cuba |
| 9360v | Madrid, Spain ● |
| 9380v | Madrid, Spain |
| 9410 | BBC, London, Eng. |
| 9440 | CP38, La Paz, Bol. |
| 9480 | Peking, China |
| 9485 | HI3U, Santo Domingo, D.R. |
| 9500 | XEWW, Mexico City, Mex. |
| 9500 | Magadan, U.S.S.R. |
| 9500 | Moscow, U.S.S.R. |
| 9505 | PRB22, Sao Paulo, Braz. |
| 9505 | Rabat, Mor. |
| 9505 | HOLA, Colon, Pan. |
| 9505 | NHK, Tokyo, Japan |
| 9505 | Belgrade, Yugoslavia |
| 9510 | London, England |
| 9515 | RAI, Caltanissetta, It. |
| 9515 | XEWW, Mexico, DF, Mex. |
| 9520 | VOA, Tangier, Mor. |
| 9520 | Copenhagen, Den. ● |
| 9520 | Port Moresby, New Guinea |
| 9520 | OAX8E, Iquitos, Peru |
| 9525 | NHK, Tokyo, Japan |
| 9525 | Warsaw, Poland |
| 9530 | AIR, Delhi, India |
| 9530 | VOA, Courier, Rhodes |
| 9530 | YVMZ, Maracaibo, Ven. |
| 9535 | VOA, Manila, P.I. |
| 9535 | HER4, Bern, Switz. ● |
| 9540 | ZL2, Wellington, N.Z. |
| 9540 | Warsaw, Poland |
| 9540 | Khabarovsk, U.S.S.R. |
| 9545 | ZYS43, Curitiba, Braz. |
| 9545 | HED5, Bern, Switz. |
| 9550 | Prague, Czecho. ● |
| 9555 | BBC, London, Eng. |
| 9555 | YSS, San Salvador, E. S. |
| 9555 | XETT, Mexico City, Mex. |
| 9560 | RTF, Paris, France |
| 9560 | Colombo, Ceylon |
| 9563 | OAX4R, Lima, Peru |
| 9565 | ZYK3, Recife, Braz. |
| 9565 | Radio Liberty, Ger. |
| 9570 | RAI, Rome, Italy |
| 9575 | ZYZ27, Rio de Jan., Braz. |
| 9580 | VLA9, Melbourne, Aus. |
| 9580 | BBC, London, Eng. |
| 9585 | ZYR56, Sao Paulo, Braz. |
| 9585 | RTF, Allouis, France |
| 9585 | Djakarta, Indonesia |
| 9590 | Hilversum, Neth. |
| 9590 | ELWA, Monrovia, Liberia |
| 9595 | JOZ3, Tokyo, Japan |
| 9600 | Tashkent, U.S.S.R. |
| 9600 | BBC, London, Eng. |
| 9600 | XEYU, Mexico, DF, Mexico |
| 9600 | CE960v, Santiago, Chile |
| 9605 | Cologne, Ger. |
| 9605v | Athens, Greece |
| 9610 | VLX9, Perth, Aus. |
| 9610 | ZYC8, Rio de Jan., Braz. |
| 9610 | Oslo, Norway ● |
| 9610 | OAX8C, Iquitos, Peru |
| 9615 | VOA, Tangier, Morocco |
| 9620 | ZYR96, Sao Paulo, Braz. |
| 9620 | Moscow, U.S.S.R. |
| 9620 | Saigon, Vietnam |
| 9625 | BBC, London, Eng. |
| 9625 | OAX8K, Iquitos, Peru |
| 9630v | CR6RL, Luanda, Ang. |
| 9635 | ZYR83, Aparecida, Braz. |
| 9640 | BBC, London, Eng. |
| 9640 | Cologne, Germany ● |
| 9640 | Accra, Ghana |
| 9640 | HOK5, Seoul, Korea |
| 9645 | TIFC, San Jose, C.R. |
| 9645 | HVJ, Vatican City |
| 9650 | BBC, Limassol, Cyprus |
| 9650 | Moscow, U.S.S.R. |
| 9650 | Amman, Jordan |
| 9655 | Radio Free Europe, Ger. |
| 9660 | LRX, Buenos Aires, Arg. |
| 9660 | VLQ9, Brisbane, Aus. |
| 9660 | Radio Liberty, Ger. |
| 9660 | Moscow, U.S.S.R. |
| 9667 | Hargeisa, Somalia |
| 9667 | TGNA, Guatemala, Guat. ● |
| 9670 | COCQ, Havana, Cuba |
| 9675 | BBC, London, Eng. |
| 9675 | NHK, Tokyo, Japan |
| 9680 | VLH9, Melbourne, Aus. |
| 9680 | XEQQ, Mexico City, Mex. |
| 9680 | Lisbon, Port. |
| 9685 | Havana, Cuba |
| 9690 | LRA32, Buenos Aires, Arg. ● |
| 9690 | BBC, London, Eng. |
| 9690 | BBC, Singapore |
| 9700 | Sofia, Bulgaria ● |
| 9700 | Leopoldville, Congo Rep. |
| 9700 | CE970, Santiago, Chile |
| 9705 | Kabul, Afghan. |
| 9710 | BBC, London, Eng. |
| 9710 | RAI, Rome, It. |
| 9720 | Moscow, U.S.S.R. |
| 9725 | Europe |
| 9725 | BBC, London, England |
| 9730 | Brazzaville, Congo Rep. |
| 9730 | Leipzig, E. Ger. |
| 9730 | DZH7, Manila, P.I. |
| 9735 | Cologne, Germany |
| 9735 | HI2T, Santo Domingo, D.R. |
| 9740 | Lisbon, Port. |
| 9740 | Khabarovsk, U.S.S.R. |
| 9740v | LR57, Buenos Aires, Arg. |
| 9745 | Brussels, Belg. |
| 9745 | HCJB, Quito, Ecua. ● |
| 9755 | ZYW23, Goiania, Braz. |
| 9755 | RTF, Paris, France |
| 9760 | Habana, Cuba |
| 9760 | BBC, London, Eng. |
| 9770 | Brazzaville, Congo Rep. |
| 9770 | 4VEH, Cap Haitien, Haiti |
| 9772 | Oario, Egypt |
| 9785 | Peking, China |
| 9795 | Cairo, U.A.R. ● |
| 9800 | Peking, China |
| 9815 | St. Georges, Windward Isl. |
| 9825 | BBC, London, Eng. ● |
| 9833 | Budapest, Hung. ● |
| 9840 | Hanoi, N. Vietnam |
| 9865 | Djakarta, Indonesia |
| 9915 | BBC, London, Eng. |
| 9920 | Peking, China |
| 9940 | Peking, China |
| 9973 | Peking, China |
| 10530 | Alma Ata, U.S.S.R. |
| 10910 | Ulan Bator, Outer Mongolia |
| 11290 | Peking, China |
| 11600 | Peking, China |
| 11672 | Karachi, Pakistan |
| 11695v | Tashkent, U.S.S.R. |
| 11700 | TGQB, Quetzatenango, Gua. |
| 11705 | NHK, Tokyo, Japan |
| 11705 | Horby, Sweden |
| 11710 | VLB11, Melbourne, Aus. † |
| 11710 | AIR, Delhi, India |
| 11710 | Djakarta, Indonesia |
| 11720 | BBC, Limassol, Cyprus |
| 11720 | Brussels, Belgium |
| 11725 | Brazzaville, Congo Rep. |
| 11725 | VOA, Colombo, Ceylon |
| 11725 | Prague, Czecho. |
| 11730 | Hilversum, Neth. ● |
| 11730 | LRO35, Buenos Aries, Arg. |
| 11735 | Rabat, Morocco |
| 11735 | Khabarovsk, U.S.S.R. ● |
| 11740 | VLC11, Melbourne, Aus. |
| 11740 | HVJ, Vatican State |
| 11740 | CE1174, Santiago, Chile |
| 11740 | Peking, China |
| 11745 | RFE, Europe |
| 11745 | Cairo, Egypt |
| 11750 | BBC, London, Eng. |
| 11750 | BBC, Singapore |
| 11750 | FEN, Tokyo, Japan |
| 11755 | RFE, Europe |
| 11755 | Hilversum, Neth. ● |
| 11755 | Leopoldville, Congo Rep. |
| 11760 | VLB11, Melbourne, Aus. |
| 11760 | Lourenco Marques, Moz. |
| 11765 | ZYB8, Sao Paulo, Braz. |
| 11765 | CP39, La Paz, Bolivia |
| 11765 | Naven, E. Germany |
| 11770 | BBC, London, Eng. |
| 11770 | VOA, Munich, Germany |
| 11775 | ZYZ28, Rio de Jan., Braz. |
| 11780 | ZL3, Wellington, N. Z. |
| 11780 | NHK, Tokyo, Japan |
| 11785 | Djakarta, Indon. |
| 11785 | VOA, Melolos, P.I. |
| 11795 | Cologne, Ger. ● |
| 11795 | Djakarta, Indon. |
| 11800 | Accra, Ghana |
| 11800v | Warsaw, Poland |
| 11805v | RAI, Rome, It. |
| 11810 | VLC11, Melbourne, Aus. † |
| 11810 | Bucharest, Rom. ● |
| 11815 | Paradys, S. Africa |
| 11820 | Peking, China |
| 11820 | BBC, London, Eng. |
| 11820 | XEBR, Hermosillo, Mex. |
| 11820 | Abidjan, Ivory Coast |
| 11825 | ELWA, Monrovia, Lib. |
| 11825 | Papeete, Tahiti |
| 11830 | Algiers, Algeria |
| 11830 | VOA, Colombo, Ceylon |
| 11830 | Montevideo, Uru. |
| 11830 | Peking, China |
| 11840 | VOA, Tangier, Mor. |
| 11840 | Lisbon, Port. ● |
| 11840 | Hanoi, N. Vietnam |
| 11845 | RFT, Allouis, France |
| 11845 | Karachi, Pak. |
| 11850 | Sofia, Bulg. |
| 11850 | Brussels, Belgium |
| 11850 | Khabarovsk, U.S.S.R. |
| 11850v | ZPA3, Asuncion, Paraguay |
| 11855 | Radio Free Europe, Ger. |
| 11855 | DZH8, Manila, P.I. |
| 11855v | Omdurman, Sudan |
| 11860 | BBC, London, Eng. |
| 11860 | Moscow, U.S.S.R. |
| 11865 | PRA8, Recife, Braz. |
| 11865 | HER5, Bern, Switz. ● |
| 11870 | Moscow, U.S.S.R. |
| 11875 | Habana, Cuba |
| 11875 | NHK, Tokyo, Japan |
| 11875 | ZYN32, Salvador, Braz. |
| 11880 | XEHH, Mexico City, Mex. |
| 11885 | Karachi, Pak. |
| 11885 | Radio Free Europe, Ger. |
| 11890 | BBC, London, England |
| 11895 | Dakar, Mali Fed. |
| 11895 | Radio Free Europe |
| 11895 | VOA, Pore, Phil. |
| 11900 | CE1190, Valparaiso, Chile |
| 11905 | RAI, Rome, Italy ● |
| 11910 | Budapest, Hung. ● |
| 11910 | Bangkok, Thai. |
| 11915 | HCJB, Quito Ecua. ● |
| 11915 | Cairo, Egypt |
| 11920 | DXF2, Manila, P.I. |
| 11920 | AIR, Delhi, India |
| 11925 | ZYR78, Sao Paulo, Braz. |
| 11925 | HLK6, Seoul, Korea † |
| 11925 | Warsaw, Pol. |
| 11925 | Tashkent, U.S.S.R. |
| 11930 | BBC, London, Eng. |
| 11935 | Radio Liberty, Ger. |
| 11940 | ZPA5, Encarnation, Par. |
| 11940 | AFRTS, Munich, Ger. |
| 11945 | Peking, China |
| 11945 | BBC, London, Eng. |
| 11945 | Cologne, Germany ● |
| 11950 | Jidda, Saudi Arab. |
| 11950 | Hilversum, Neth. |
| 11950 | Saigon, S. Vietnam |
| 11955 | BBC, London, Eng. |
| 11955 | BBC, Singapore |
| 11960 | CE1196, Santiago, Ch. |
| 11960 | Conakry, Guinea |
| 11965 | Radio Liberty, Ger. |
| 11975 | Peking, China |
| 11975 | ELWA, Monrovia, Liberia |
| 11980 | Moscow, U.S.S.R. |
| 11990 | Prague, Czecho. |
| 12030 | Moscow, U.S.S.R. |
| 12055 | Peking, China |
| 12080 | Lisbon, Port. |
| 12095 | BBC, London, Eng. |
| 15060 | Peking, China |
| 15070 | BBC, London, Eng. |
| 15080 | Melbourne, Australia |
| 15085 | St. Georges, Windward Isl. BWI |
| 15085 | Paradys, So. Africa |
| 15095 | Peking, China |
| 15105 | AIR, Delhi, India |
| 15110 | XERR, Mexico, D. F., Mex. |
| 15115 | HCJB, Quito, Ecuador ● |
| 15115 | Peking, China |
| 15120 | Colombo, Ceylon |
| 15120 | RAI, Rome, Italy |
| 15120 | Warsaw, Poland † |
| 15120 | HVJ, Vatican City |
| 15125 | Seoul, Korea ● |
| 15125 | Lisbon, Portugal ● |
| 15130 | RTF, Allouis, France |
| 15130 | VOA, Melolos, P. I. |
| 15135 | PRB23, Sao Paulo, Braz. |
| 15135 | NHK, Tokyo, Japan |
| 15135 | Radio Free Europe, Port. |
| 15140 | Peking, China |
| 15140 | BBC, London, Eng. |
| 15145 | ZYK33, Recife, Brazil |
| 15145 | Radio Free Europe, Port. |
| 15150 | Peking, China |
| 15153 | OAX4T, Lima, Peru |
| 15155 | ZYB9, Sao Paulo, Brazil |
| 15155 | ELWA, Monrovia, Libe. |
| 15155 | Horby, Sweden |
| 15155 | VOA, Melolos, P. I. |
| 15160 | RTF, Allouis, France |
| 15160 | XEWW, Mexico City, Mex. |
| 15160 | Ankara, Turkey |
| 15165 | ZYN7, Fortaleza, Braz. |
| 15165 | Copenhagen, Denmark |
| 15165 | Damascus, Syria |
| 15170 | Tromso, Norway |
| 15170 | Radio Free Europe, Port. |
| 15175 | Oslo, Norway ● |
| 15180 | Melbourne, Australia |
| 15185 | VOA, Poro, P. I. |
| 15185 | Radio Free Europe, Port. |
| 15190 | Brazzaville, Congo Rep. |
| 15190 | Helsinki, Finland † |
| 15190 | Moscow, USSR |
| 15195 | Radio Free Europe, Ger. |
| 15205 | XESC, Mexico City, Mex. |
| 15210 | VOA, Melolos, P. I. |
| 15210 | ZPA7, Asuncion, Paraguay |
| 15215 | Radio Free Europe, Port. |
| 15215 | VOA, Okinawa |
| 15220 | Hilversum, Neth. † |
| 15225 | Taipei, Taiwan, China |

| Kcs. | Call and Location |
|---|---|
| 15230 | VOA, Colombo, Ceylon |
| 15230 | BBC, London, Eng. |
| 15235 | NHK, Tokyo, Japan |
| 15240 | VLB15, Melbourne, Aus. |
| 15240 | Horby, Sweden |
| 15240 | Moscow, USSR |
| 15240 | Belgrade. Yugoslavia |
| 15245 | ZYE21, Belem, Brazil |
| 15245 | Leopoldville, Congo Rep. |
| 15250 | VOA. Melolos, P. I. |
| 15250 | Bucharest, Rumania ● |
| 15255 | Radio Free Europe, Port. |
| 15260 | FEN, Tokyo, Japan |
| 15265 | Colombo. Ceylon |
| 15265 | VOA, Munich, Ger. |
| 15275 | Cologne, Germany |
| 15275 | Warsaw, Poland ● † |
| 15280 | ZL4, Wellington. N.Z. |
| 15285 | Prague, Czecho. |
| 15290 | VOA, Tangiers, Mor. |
| 15290v | Habana, Cuba |
| 15295 | PRL8, Rio de Jan., Brazil |
| 15295 | NHK, Tokyo. Japan |
| 15295 | Cologne, Germany |
| 15300 | BBC, London, Eng. † |
| 15300 | DZH9, Manila, P.I. |
| 15300 | Bucharest, Roumania |
| 15300v | Lourenco, Marques, Moz. |
| 15305 | Radio Liberty, Ger. |
| 15310 | AIR, Delhi, India |
| 15315 | VLC15, Melbourne, Aus. |
| 15315 | HEU6, Bern, Switz. ● |
| 15325 | ZYR228, Sao Paulo. Braz. |
| 15330 | VOA, Munich, Germany |
| 15530 | VOA. Tangiers, Mor. |
| 15335 | VOA, Poro, P, I. |
| 15340 | Radio Liberty, Germany |
| 15340v | Habana, Cuba |
| 15345 | Taipei, Taiwan. China |
| 15345 | Rabat, Morocco |
| 15350 | Luxembourg, Lux. |
| 15355 | Radio Free Europe, Port. |
| 15370 | ZYC9, Rio de Jan., Braz. |
| 15370 | Radio Liberty, Germany |
| 15375 | BBC, London. Eng. |
| 15385 | DZF3, Manila, P.I, |
| 15385 | CXA60, Montevideo, Urug. |
| 15385 | Lisbon, Port. |
| 15385 | VOA. Tangiers. Mor. |
| 15390 | NHK, Tokyo, Japan |
| 15395 | Radio Liberty, Germany |
| 15400 | RAI, Rome, Italy |
| 15405 | Cologne. Germany |
| 15425 | Hilversum, Neth. |
| 15440 | VOA. Munich, Germany |
| 15460v | PZC, Paramariob, Surinam |
| 15465 | Paramaribo, Surinam |
| 15475 | Cairo, UAR |
| 15555 | Peking, China |
| 17705 | Luanda, Angola |
| 17725 | ZYR232, San Jose Dos Campos, Brazil |
| 17740 | Peking, China |
| 17745 | Accra. Ghana |
| 17780 | BBC, London, England |
| 17790 | BBC, London, Eng. |
| 17845 | Brussels. Belgium |
| 17865 | Brussels, Belgium |
| 17875 | Habana, Cuba |
| 17880 | Lisbon, Portugal |
| 17890 | HCJB, Quito, Ecuador |
| 17895 | Lisbon, Port. |
| 17900 | Cairo, Egypt |
| 21620 | Habana, Cuba |

## Canadian Short-Wave— Domestic and International

*Transmitter at Sackville, New Brunswick

| Kc. | C.L. | Location |
|---|---|---|
| 5970 | CBNX | St. John's, Nfld. |
| 5970 | CKNA | Montreal, Que.* |
| 5990 | CHAY | Montreal. Que.* |
| 6005 | CFCX | Montreal, Que. |
| 6010 | CJCX | Sydney. N.S. |
| 6030 | CFVP | Calgary, Alta. |
| 6060 | CKRZ | Montreal. Que.* |
| 6070 | CFRX | Toronto, Ont. |
| 6080 | CKFX | Vancouver. B.C. |
| 6090 | CBFW | Montreal, Que. |
| 6090 | CKOB | Montreal. Que.* |
| 6130 | CHNX | Halifax, N.S. |
| 6160 | CBUX | Vancouver, B.C. |
| 6160 | CHAC | Montreal, Que.* |
| 9520 | CBFR | Montreal. Que. |
| 9585 | CKLP | Montreal. Que.* |
| 9610 | CBFX | Montreal, Que. |
| 9610 | CHLS | Montreal, Que.* |
| 9630 | CBFO | Montreal, Que. |
| 9630 | CKLO | Montreal, Que.* |
| 9710 | CHLR | Montreal, Que.* |
| 9740 | CHFO | Montreal. Que.* |
| 11705 | CBFY | Montreal. Que. |
| 11705 | CKXA | Montreal. Que.* |
| 11720 | CBFL | Montreal, Que. |
| 11720 | CHOL | Montreal. Que.* |
| 11760 | CBFA | Montreal, Que. |
| 11760 | CKRA | Montreal, Que.* |
| 11900 | CKEX | Montreal, Que.* |
| 11945 | CKEX | Montreal, Que.* |
| 15090 | CKLX | Montreal, Que.* |
| 15105 | CKUS | Montreal, Que.* |
| 15190 | CBFZ | Montreal, Que. |
| 15190 | CKCX | Montreal, Que.* |
| 15255 | CKSR | Montreal. Que.* |
| 15275 | CKBR | Montreal, Que.* |
| 15320 | CKCS | Montreal, Que.* |
| 17710 | CHSB | Montreal. Que.* |
| 17735 | CHRX | Montreal, Que.* |
| 17820 | CKNC | Montreal, Que.* |
| 17865 | CHYS | Montreal, Que.* |
| 21600 | CKRP | Montreal. Que.* |
| 21710 | CHLA | Montreal. Que.* |

## Solution to Roundword Puzzle on page 66

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B | I | F | I | L | A | R | E | F | L | E | X |
| A | N | G | S | T | R | O | M | E | S | H | E |
| M | N | O | M | O | G | R | A | P | H | Y | N |
| M | O | H | A | I | R | P | I | N | O | B | O |
| A | S | W | A | L | L | E | N | O | L | R | N |
| G | I | O | T | G | A | P | E | D | E | I | O |
| N | D | R | L | R | T | A | X | E | N | D | B |
| I | E | R | E | E | P | A | T | R | D | A | L |
| K | T | A | D | O | I | R | E | P | I | R | E |
| C | A | N | P | N | O | T | S | I | P | A | D |
| O | G | U | L | E | E | H | W | Y | L | F | D |
| R | E | Z | I | L | A | U | Q | E | K | O | Y |

# JOB COUNSELORS ADVISE LEARN ELECTRONICS


## SPECIAL TRAINING KITS

***NO EXTRA COST***

## NEW Home Study Course in ELECTRONICS

**Principles-Practices-Maintenance**

## NOW READY

This is the Electronic Age. Electronic equipment is already being used to count and control flow of liquids, solids, gases. Electronics is employed to search for oil, make surveys, control traffic, machine complex parts and in atomic installations. Military uses of Electronics are great and expanding rapidly. In business, Automation with Electronics plays an important part, prepares payrolls, calculates engineering formulas.

### Learn More to Earn More

Now, to meet the growing demand for trained Electronic Technicians NRI has developed a comprehensive, complete course in Electronics Principles, Practices, Maintenance. This training stresses fundamentals. It is a course specially prepared for beginners and for Technicians. You get both theory and practical experience in an interesting, exciting way.

### Ten Special Training Kits Give Practical Experience

You get practical experience with Thyratron Tube circuits, Multivibrators, build a D'Arsonval type Vacuum Tube Voltmeter (Kit 2), work and experiment with pentode tubes, selenium resistors oscillators, transistors, magnetic amplifiers; and get practical experience in telemetry circuits as used in earth satellites, digital and analog computers (Kit 9).

### NRI Oldest, Largest School

SEE OTHER SIDE

Wishing for success won't bring success. You must act. Get FREE 64-page Catalog from America's oldest and largest home study Electronic-Radio-Television school. It gives facts, opportunities in Industrial and Military Electronics careers, also shows what you learn, tells about NRI's other courses in Radio Television Servicing and Radio Television Communications. Monthly payments plan. Mail Postage Free Card for 64-page Catalog. NATIONAL RADIO INSTITUTE, Washington 16, D.C.

**POSTAGE FREE CARD**

**MAIL NOW**

FIRST CLASS
Permit No. 20-R
(Sec. 34.9, P. L. & R.)
Washington, D.C.

**BUSINESS REPLY CARD**

No Postage Stamp Necessary if Mailed in the United States

**POSTAGE WILL BE PAID BY**

**National Radio Institute**

**3939 Wisconsin Avenue**

**Washington 16, D.C.**

# Learn RADIO, TELEVISION AND ELECTRONICS

## by Practicing at Home in Your Spare Time

**At No Extra Cost you get specially developed Electronic Training Kits for practical experience. Shop and laboratory practice at home make learning easier, interesting, faster. You do not need a high school diploma or previous experience.**

### Increasing Demand for Trained Men

This is the Electronics age. Men with Electronic know-how are in demand. They enjoy high pay and growing opportunities for advancement. Satellites, Radar, Automation in Industry; Missiles, Rockets, Planes, Stereo, TV, Radio, Two Way Communications for transportation are a few of the fantastic developments in the fast growing Electronics industry. If you are not completely satisfied with your work; if you are doubtful about your future, investigate Electronics.

### High Pay, Prestige, Bright Future

What branch of Electronics interests you? Thousands of successful NRI graduates prove that NRI's learn-by-practice method is the way to success. You start in your chosen career 'way ahead of the man who only learns from books. You do not need to give up your job. You do not need to go away to school. You learn at home, get practical knowledge from training kits NRI provides.

### NRI Has Trained Thousands for Success

"I get over twice the salary I made before enrolling. NRI training gave me a thorough understanding." H. ATKINSON, Austin, Tex.

"Now in charge of sound effects for CBC. NRI opened doors to greater opportunity for me." F. TUDOR, Toronto, Ontario.

"Averaged $150 a month spare time before I graduated. Now have my own full time business." F. W. COX, Hollywood, Cal.

**NEW COURSE IN ELECTRONICS** TURN PAGE

### Cut Out and Mail—No Stamp Needed

NATIONAL RADIO INSTITUTE
WASHINGTON 16, D. C. 2JB3

Send me your Electronic, Radio-TV catalog without cost or obligation. I am interested in the course checked below: (No representative will call. Please PRINT.)

☐ Industrial Electronics ☐ FCC License
☐ Communications ☐ Servicing

Name ........................................ Age ..........

Address ........................................

City .................... Zone ...... State ..........


NRI

ACCREDITED MEMBER NATIONAL HOME STUDY COUNCIL

### Train With the Leader

NRI is the world's oldest and largest home study Electronics school. You benefit from the experience NRI has gained from training men for 45 years. NRI offers you proven courses of home study in Electronics; Principles, Practices and Maintenance—Radio Television Communications—Radio Television Servicing.

### Start Soon, Earn More

Soon after enrolling NRI shows you how to apply your knowledge to earn extra money doing Electronic repairs or servicing Radio and Television sets for friends and neighbors. Take the first step toward success now. Find out what NRI offers you. Mail the postage-free card. No obligation. Cost of NRI training is low. Monthly payment plan available. NATIONAL RADIO INSTITUTE, Washington 16, D.C.